

WHY YOU SHOULD BE DRIVING A STATION WAGON

# CAR DRIVER<sup>®</sup>

OCT/2017

INTELLIGENCE. INDEPENDENCE. IRREVERENCE.

OUR 11TH ANNUAL TEST OF HOW FAST THESE THINGS REALLY GO

## 19 Ferocious Cars, 1 Wicked Racetrack: Lightning Lap 2017



STARRING

**MERCEDES-AMG GT R  
AND CHEVROLET  
CAMARO ZL1 (AND ZL1 1LE!)**

AND...

ALFA ROMEO GIULIA QUADRIFOGLIO//AUDI S8 PLUS//BMW  
ALPINA B7//FIAT 124 SPIDER ABARTH//HONDA CIVIC Si  
MERCEDES-AMG E63 S//PORSCHE 911 TURBO S//AND MUCH MORE!

# LEAVE A MARK



Options shown. ©2017 Lexus





## THE LEXUS HIGH PERFORMANCE LINE

The 2017 GS F, RC F and the all-new 2018 LC 500 have arrived, with the unmistakable sound of 5.0-liter V8 engines and the precision of Sport Direct-Shift transmissions. This is the highest expression of performance, from Lexus.

[lexus.com/performance](http://lexus.com/performance) | #Lexus





COUTURA



MY STYLE. MY SEIKO.



JIMMIE JOHNSON  
PROFESSIONAL RACE CAR DRIVER

RADIO SYNC SOLAR

PRECISELY SYNCHED TO OFFICIAL  
RADIO FREQUENCIES FOR  
THE WORLD'S MOST ACCURATE TIME.

SSG019 | [www.SeikoUSA.com](http://www.SeikoUSA.com)

SEIKO

AVAILABLE AT  
JCPenney



## Features

045

*Lapped Up*

### LIGHTNING LAP

2017's hottest performers meet their nemesis, Virginia International Raceway, as we try to dodge lightning.

*by K.C. Colwell, Josh Jacquot, Tony Quiroga, Aaron Robinson, and Eric Tingwall*

071

### STATIONS OF THE WAGON

A brief investigation into why we like wagons so much more than crossovers.

**074 • Comparison Test**

### ENEMY OF THE ESTATE

Mercedes-Benz E400 4MATIC Wagon vs. Mercedes-AMG GLE43 4MATIC.

*by Jeff Sabatini*

**080 • First Drive**

### PORSCHE PANAMERA SPORT TURISMO

Don't call it a wagon.  
*by Eric Tingwall*

084

*Long-Term Test*

### 2016 MAZDA MX-5 MIATA CLUB

Have we told you about our little guy? He's gifted, you know.

*by Daniel Pund*

## On the Cover

Our Christmas-colors wish list.

*photography*

*by Marc Urbano*

# Car and Driver<sup>®</sup> vol. 63, no. 4

## In this Issue:

“Much like that other uniquely American art form, jazz, wagons have become a genre favored by only small numbers of loyalists, purists, and kooks.”

—JEFF SABATINI, “STATIONS OF THE WAGON”

071







Ram is a Registered Trademark of FCA US LLC.





RAM LIMITED  
**TUNGSTEN**

**YOU'LL APPRECIATE  
THE FINER POINTS**

THE MOST LUXURIOUS RAM TRUCK EVER

UCONNECT® 4C, 8.4" TOUCHSCREEN  
WITH APPLE CARPLAY AND ANDROID  
AUTO SUPPORT

THE FIRST EVER APPLICATION OF  
A SUEDE HEADLINER IN A TRUCK

100% ULTRA-PREMIUM NATURA  
PLUS LEATHER WITH INDIGO BLUE  
ACCENTS THROUGHOUT CABIN

TUNGSTEN CHROME ACCENTS  
AND REAL-WOOD INTERIOR TRIM



**RAM**

[RAMTRUCKS.COM](http://RAMTRUCKS.COM)





## Departments

### Columnists

#### 032 . JOHN PHILLIPS

Licensed to avoid taxes.

#### 034 . DANIEL PUND

Unfinished business.

#### 036 . EZRA DYER

Prepare to get Demonized!

### Upfront

#### 021 . *Reveal of the Month*

#### ROLLS-ROYCE PHANTOM

The king of cash shows who's boss with an all-new range topper.

#### 024 . *The Physics of . . .*

#### THE WACKY WAVING INFLATABLE

**TUBE MAN** . How that glorified windsock pulls off those fresh pop-and-lock dance moves.

#### 026 . *Infographic*

#### INFRASTRUCTURE RUPTURE

Rating the terribleness of American roads.

#### 028 . *Patron Saints*

#### OILED UP

Lucas dollars might lubricate more racing than Lucas oils.

#### 030 . *Tech Department*

#### TURBO DOGS

Veteran engineers hope to revolutionize engine downsizing.

### Drivelines

#### 096 . DODGE CHALLENGER SRT

**DEMON** . We ride out of Helltown, one burnout at a time.

**100 . AUDI RS5** . This new coupe is a 450-hp pussycat.

#### 102 . SUBARU CROSSTREK

Improved for both on- and off-road excursions.

#### 104 . *Tested*

#### TOYOTA CAMRY XLE HYBRID

A new platform and a jolt of personality bring some life to this hybrid sedan.

#### 106 . *Tested*

**DODGE DURANGO SRT** . No, this is not the SUV with the Hellcat.

### Etc.

#### 009 . BACKFIRES

So much bullsh!t.

#### 108 . WHAT I'D DO DIFFERENTLY

Johan de Nysschen.

## On the Web

### MASERATI GRANTURISMO COUPE AND CONVERTIBLE

Maser's updated GT is the same as it ever was, and that's no bad thing. [CarandDriver.com/2018GranTurismo](http://CarandDriver.com/2018GranTurismo)

### PORSCHE PANAMERA TURBO S E-HYBRID

A turbocharged and electrified glimpse into Porsche's future. [CarandDriver.com/2018PanameraHybrid](http://CarandDriver.com/2018PanameraHybrid)

### AUDI A5 CABRIOLET

A renaissance droptop. [CarandDriver.com/2018AudiA5Cab](http://CarandDriver.com/2018AudiA5Cab)





## Born to non-conform

Progress is never blending in.

The Audi Q5 represents everything we've learned from building one of the world's most progressive vehicles. So we've loaded our groundbreaking SUV with technology and features that can deliver beyond the norm. Like standard Audi smartphone interface for simple connection with compatible devices,<sup>1</sup> and available rear cross traffic assist<sup>2</sup> that can sense approaching vehicles and apply brakes when needed. Equipped with our 2.0-liter TFSI<sup>®</sup> engine that can propel you from 0 to 60 mph in just 5.9 seconds, the Q5 leaves the status quo – and the competition – in the dust.<sup>3</sup>

The Audi Q5 is here.

[audiusa.com/Q5](http://audiusa.com/Q5)



<sup>1</sup> Always pay careful attention to the road, and do not drive while distracted. See Owner's Manual for further details, and important limitations.

<sup>2</sup> Driver Assistance features are not substitutes for attentive driving. See Owner's Manual for further details, and important limitations.

<sup>3</sup> Always obey local speed and traffic laws.

"Audi," "TFSI," all model-names, and the four rings logo are registered trademarks of AUDI AG. ©2017 Audi of America, Inc.



# MAKE YOUR RIDE MORE REWARDING WITH INSTANT GOLD STATUS



Shell  
**V-Power**  **NITRO+**  
Premium Gasoline

The official fuel of Car and Driver.

**CAR AND DRIVER**

**Join the Fuel Rewards® program to get Instant Gold Status and save on every fill, every day.** With Gold Status, Fuel Rewards members save at least 5¢ per gallon on all fuel grades including Shell Regular, Plus, Diesel, and Shell V-Power NitRO+ premium gasoline.

**JOIN NOW at**  
**[fuelrewards.com/gold](http://fuelrewards.com/gold)**



\*Restrictions apply. To qualify for the Gold/Silver Status offers, you must be a Fuel Rewards® member and swipe your Fuel Rewards® card or enter your Alt ID when you fuel at a participating Shell station. With Gold Status, you will receive 5¢/gal in Fuel Rewards® savings on every fill-up. The 5¢/gal reward for Gold Status will be combined with other rewards in your Fuel Rewards® account. If you are an existing Fuel Rewards® member, you will receive Gold Status from 6/5/2017 through 12/31/17, the "Existing Member Introductory Period". If you are a new Fuel Rewards® member, you will receive Gold Status for the initial month you join through the last day of the month, 6 full calendar months later, the "New Member Introductory Period". The last 3 months of the Existing Member Introductory Period or the New Member Introductory Period (collectively the "Introductory Period") is the "Qualification Period". You will retain your Gold Status during the Qualification Period, but you must make 6 qualifying fuel purchases to qualify for Gold Status for the next 3 months, the "Benefit Period". During the Benefit Period, you must continue to make 6 qualifying fuel purchases to maintain your Gold Status for the next 3-month Benefit Period. A qualifying fuel purchase is any fuel purchase at a participating Shell station in which you swipe your Fuel Rewards® card or enter your Alt ID and fill up with at least 5 gallons of any grade of fuel. For example, if you are a new Fuel Rewards® member and register on 6/5/2017, you will receive Gold Status through the New Member Introductory Period (i.e., 12/31/2017). You will need to fill up with at least 5 gallons of fuel at least 6 times during the Qualification Period (i.e., 10/1/2017 and 12/31/2017) to maintain Gold Status during the Benefit Period (i.e., from 1/1/2018 to 3/31/2018). Thereafter, if you continue to fill up with at least 5 gallons of fuel at least 6 times during the successive 3 consecutive month Benefit Periods, you will retain your Gold Status. If you do not maintain your Gold Status, you will receive Silver Status. With Silver Status, you will receive 3¢/gal in Fuel Rewards® savings. The 3¢/gal reward for Silver Status will be combined with other rewards in your Fuel Rewards® account. Redeem Fuel Rewards® savings with your Fuel Rewards® card or Alt ID at participating Shell stations. Fuel Rewards® savings are limited to 20 gallons of fuel per purchase, per vehicle, or fraud limits placed by Shell and/or limits placed on your financial card by your financial institution, each of which may be lower. Fuel Rewards® savings must be redeemed in a single transaction. Once you begin to dispense fuel using your Fuel Rewards® savings, you must dispense to the 20-gallon limit or you forfeit any remaining discounted gallons of fuel. For example, if you only pump fifteen (15) gallons of fuel, you would abandon the remaining five (5) gallons of discounted fuel. If you have a rewards balance greater than the current per-gallon price of fuel, the price will roll down to the maximum capability of the fuel equipment, and your remaining rewards will be saved for a future fuel purchase. Dispenser may require a price of up to 10.9¢/gal. It may not be possible to combine multiple discounts and/or rewards in a single transaction. For purchases of \$75 or more, please go inside to pay. Unbranded diesel and alternative fuels may not be eligible. The Fuel Rewards® program is owned and operated by Excentus Corporation. Offer may be modified or discontinued at any time without notice. Not valid where prohibited by law. Please see [fuelrewards.com](http://fuelrewards.com) for complete Fuel Rewards® program details and Terms and Conditions. Other restrictions may apply. All trademarks are the property of their respective owners. To learn more, visit [fuelrewards.com/gold](http://fuelrewards.com/gold) or call (888) 603-0473.



# Backfires: The joyful noise of the commentariat, rebutted sporadically by Ed.

## THREE-CAR MONTE

As a simple man, this is simply what I see when I look at the July 2017 cover. Ford GT: man; McLaren 720S: woman; Porsche 911 GT3: frog.

—Rick Roach  
The Woodlands, TX

## JOY DIVISION

I enjoyed reading about the “power trio” [“Feel Lucky, Punk?”] in the July issue. I love the styling of the Porsche GT3 and the Ford GT, but the McLaren is hideous. While outward visibility may be improved with the carbon-fiber A-pillars and translucent C-pillars, the car itself suffers from a chronic case of walleye vision.

—Tom Stevens  
Fort Gratiot  
Township, MI

Your headline for the Ford GT should have read, “Ford Aims at Ferrari, Hits Nissan GT-R.” A car this awesome does deserve a V-12, or at least a V-8.

—Mark Pichaj  
Burbank, CA

Nobody is going to pay \$450,000 for a beautiful car that sounds like an apoplectic malt mixer, no matter how fast it is. A non-turbo Coyote 5.0-liter V-8 would be an improvement. The GT’s dough would pay for six

Corvette Grand Sports or seven Mustang GT350s that sound the way a car should.

—Rian Flourens  
Las Vegas, NV

## COPPER LINE

Thanks for your recent article on U.S. Route 191 in eastern Arizona [“Raising Arizona,” July 2017]. In October 1971, I traded a Chevrolet Chevelle V-8 sedan for a Porsche 911T. Then I took my family on a 1200-mile loop from New Mexico around the Mogollon Rim, including the Coronado Trail. When I came back home, I was truly smitten. Now 46 years later, I still firmly believe that Porsches are made to be driven on twisty roads just like those.

—Ed Merry  
Newport News, VA



**“NOBODY IS GOING TO PAY \$450,000 FOR A BEAUTIFUL CAR THAT SOUNDS LIKE AN APOPLECTIC MALT MIXER, NO MATTER HOW FAST IT IS.”**

Now you've let the cat out of the bag! After living in Arizona for 42 years, I finally traveled the “Devil's Highway.” In August last year, I drove my 2015 VW GTI from Morenci to Springerville along U.S. Route 191. During the drive to Hannagan Meadow, a distance of approximately 70 miles, I saw exactly one vehicle, just one! The 11 miles of curves posted at 10 mph will take your breath away if you attempt to go double the speed limit. It's truly a magnificent piece of road.

—Sal Meringolo  
Phoenix, AZ

Can't you people read your navigation devices? They'll route you through western New Mexico on the safer and more serene U.S. Route 180. The Coronado Trail has many

hazards. Leave this road to us danger-loving motorcyclists, please!

—Andy Ruhl  
Tucson, AZ

While the death of the manual evokes many palpable emotions [page 059], there's no reason to invoke “palpable” twice in one paragraph.

—Charla Vandermeer  
Nashville, TN

**You just gave our copy chief palpitations—Ed.**

## GETTING FIXED

One cannot claim to be an astute author and at the same time use a contraction, “DEF,” without defining it's [sic] meaning [“The Fix Is In,” July 2017]. Let's see, diesel electric fuel? Or perhaps diesel emissions fix? Okay, I know it is an aqueous solution of





# EXTREME PERFORMANCE



Side Window Deflectors



No-Drill MudFlaps



SEE OUR FULL LINE OF AUTOMOTIVE ACCESSORIES AT **WEATHERTECH.COM**

**Accessories Available for**

Acura · Audi · BMW · Buick · Cadillac · Chevrolet · Chrysler · Dodge · Ferrari · Ford · GMC · Honda · Hummer · Hyundai · Infiniti · Isuzu · Jeep · Kia · Land Rover · Lexus · Lincoln · Maserati · Mazda · Mercedes-Benz · Mercury · Mini · Mitsubishi · Nissan · Oldsmobile · Plymouth · Pontiac · Porsche · Saab · Saturn · Scion · Subaru · Suzuki · Toyota · Volkswagen · Volvo





## *Watch the Action!*

**SEPTEMBER 22 - 24**

CONTINENTAL TIRE MONTEREY GRAND PRIX

**OCTOBER 4 - 7**

MOTUL PETIT LE MANS



**RE**



Cargo Liner

# **WeatherTech®**

**Order Now: 800-441-6287**  
**WeatherTech.com**



American Customers  
**WeatherTech.com**



Canadian Customers  
**WeatherTech.ca**



European Customers  
**WeatherTech.eu**



urea, but that is because I am a chemist, and it still took me too long to figure out.

—Curtis Franz  
Prescott, AZ

**Refer to page 052, where “DEF” is defined as “diesel exhaust fluid (DEF).” Also, it’s an acronym, not a contraction—Ed.**

You would do a great service to VW diesel owners by conducting a before-and-after comparison test of a recent model that has undergone factory-certified upgrades to the emission system. Particular emphasis should be on emission levels, mileage, and performance.

—Bob Balascio  
Madison, NJ

**Great idea. We should put something like that in the July issue—Ed.**

## RIDIN’ DIRTY

After “Boot Scoot Boogie,” [July 2017], what’s next? Go-karts? Golf carts? Grocery carts? Anything with four wheels, right? Better check your name, it’s *Car and Driver*.

—Mike Boehler  
Houston, TX

Interesting article on mobility scooters. No doubt you’ll get complaints because they’re not cars. A minor point: My Pride Victory 10 has optional cupholders. They’re somewhat pricey and break easily, but they do exist and they do the job. Note to Mr. Beard: If you use a metal or ceramic cup, that could certainly serve as an ashtray.

—Keith Milligan  
Seekonk, MA

I can’t decide which is worse, that C/D did a comparison test of mobility scooters or that I actually read the damn article.

—Scott Rothermel  
Grand Ledge, MI

## WORD POWER

Regarding “The Car and Driver Guide to Automotive Bullshit” [July 2017], suffice it to say, I am grateful Jared had the Gall. Great piece.

—Randall Mix  
McHenry, IL

I can’t thank you enough for the *Car and Driver* bullshit guide. I’ve been subscribing for decades, so, yes, I’m a geezer. A geezer who likes cars and likes

**“I CAN’T DECIDE WHICH IS WORSE, THAT C/D DID A COMPARISON TEST OF MOBILITY SCOOTERS OR THAT I ACTUALLY READ THE DAMN ARTICLE.”**



## Explained: Fixin’ to Fix

The fix is *not* in! In your detailed reporting on Dieselgate [“The Fix Is In,” July 2017], you did not mention the ongoing 3.0-liter V-6 diesel issues of the Generation 2 engine. It appears to me that you also were very political in minimizing references to Porsche and Audi. Was that because they spend tons of advertising dollars with your magazine and you do not want to ruffle their feathers? As a Porsche Cayenne Gen 2 diesel owner, I find this whole process frustrating. Why was there no discussion of the likely outcome for VW, Porsche, and Audi to successfully get Gen 2 diesels into compliance? Inquiring minds want to know.

—Hilton Geartner, Maitland, FL

**We didn’t dive into the 3.0-liter issue because the story was about testing the effects of the approved 2.0-liter fix. With regard to the roughly 78,000 VW 3.0-liter diesels in the U.S., a settlement was approved in May that will allow the 20,000 owners of Gen 1 (2009–2012) V-6 diesels to take a buyback offer or terminate their leases. If an emissions solution is approved for these earlier Gen 1 engines, then owners will be able to select that option as well. The 58,000 customers of the Gen 2 (2013–2016) V-6 aren’t getting a buyback offer or lease-termination deal yet because VW is optimistic that U.S. regulators will approve its repair plan that will bring said engine into compliance. According to the settlement summary, if “Volkswagen is unable to obtain a timely approved Emission Compliant Repair,” then the offer to buyback or terminate the lease will be extended to Gen 2 customers—Ed.**

driving. I loved this article! So many points I agreed with that if I were to list them all, I’d just have to reprint the entire article. Can this become a monthly column? Us geezers need your support in our rantings!

—Paul Bartels  
Cheverly, MD

scientist (no bullshit), and I proved it by conjugating the hypermulation of the auto factor (bullshit).  
—Gary Striker  
Labelle, FL

**Scientifically proven—Ed.**

*Car and Driver* has always been a welcome sight in the mailbox for as long as I can remember. After reading “The Car and Driver Guide to Automotive Bullshit,” I couldn’t help but feel a little bit of joy and relief that there are some in the land of car lovers who have the same level of disdain for certain automotive-related annoyances as I do. May each door beep

be a bug in the soup of every manufacturer who finds them necessary, because I sure as hell don’t. Keep up the great work on consistently fueling up my automotive addiction.

—Eric Pinger  
Reno, NV

“The *Car and Driver* Guide to Automotive Bullshit!” was one of the best pieces I’ve read in the 40 years I’ve been a subscriber—high praise for a mag that has featured the scribbles of David E. Davis Jr., P.J. O’Rourke, and Brock Yates.

—John B. Challinor II  
Milton, ON  
... and Ed.—Ed.

I have been a C/D subscriber since *Tyrannosaurus rex* roamed my backyard. A few of your colleagues may not want to hear this, but no feature story that your mag ever published comes close to your guide to automotive bullshit! This is not my opinion. It’s a fact! I’m a former







"... a radical departure from just about every other camera on the market." — *Car and Driver*

# INTRODUCING WAYLENS

## The Ultimate Automotive Camera System

Only the Waylens Automotive Camera System is specifically designed to amplify your fun behind the wheel.

Consisting of a high-precision camera, plug-n-play OBD-II transmitter, one-click remote and mobile app, the Waylens lets you overlay vehicle performance data right into video and share your best driving moments in real time.



### DRIVE

With the only camera built for auto enthusiasts



### CAPTURE

Performance data and every moment in HD precision



### SHARE

Like a pro with simple mobile and desktop app



**WAYLENS.**

Order now and take the Waylens on a risk-free 30-Day Test Drive at [waylens.com](http://waylens.com)





B

You forgot to include John Phillips's columns in your list.  
—Kurt Mathes  
Gardner, IL

I recently read that one of your editors thinks the panic button should be eliminated. However, I had an incident a few years back where mine might have saved a life. I was walking back to my car after leaving a store when I noticed a dad, holding a small child, walking past the row where I was parked. Trailing behind them was a four- or five-year-old girl. I noticed that a car was about to back up straight into the girl (she was short enough that the driver couldn't see her). I was too far away to run to her aid, so I hit the panic button on my key fob, sounding the horn on my car, and the guy backing up abruptly stopped. The little girl was still dawdling, unaware of the danger, and the driver started backing up again. I hit the button a second time, the car again stopped, and, by now, Dad noticed something was amiss and ran to his daughter. Disaster averted.

—Steve Ramsdell  
Ayer, MA

**Finally, someone is thinking of the children—Ed.**

**STUCK ON YOU**  
I just wanted to thank John Phillips and Car and Driver for Phillips's July 2017 column. I am sure that Phillips will receive negative emails from readers

who are upset at any challenge to the phrases "Buy American" or "America First." While some of those readers speak from a place of prejudice, many of them are merely trying to find their way in a world where things they thought were bedrock are now shifting underneath them. It's easy to see what's coming. It's hard to reconcile that with what's disappearing. They—and the rest of us—can only see a way forward if we talk about what is, instead of what we'd like to be.

Phillips's column works very hard to show that slogans are nice, but the reality is actually better. I hope that this helps some readers see past the slogans.

—Joel Becker  
San Francisco, CA

Can't wait to read all the righteously outraged backfires about Phillips's "politically tainted" July column. I'll renew my subscription for another 40 years to help offset all the cancellation threats.

—Joe Leben  
West Linn, OR

So your resident liberal is now pushing a pro-globalist agenda? Criticizing people who believe in America First is a new low, even for him. How about keeping left-wing politics out of your magazine and telling us about cars?

—M. Booth  
Galt, CA

I'm sure you will get all kinds of feedback

Oh my gosh, in the name of all that is holy, how can you use such language?! I am appalled. *Won't someone please think of the children?* This is vulgar and tasteless. This kind of journalism is what's wrong with the world. I am canceling my subscription. You have lost all your class.

All the above statements... *bullshit!* I figured you would get your fair share of letters criticizing your guide and that I would show my support. Absolutely loved it, agreed with all but the diesel-car thing. Yet another reason I have been loyal only to Car and Driver for the last 34 years! Thank you, you magnificent bastards!

—Shane Spence  
Omaha, NE

I could not believe the double-page, four-inch-tall headline of profanity in the July edition. Surely a copy editor, proofreader, pressman, or editor had to question the ethics of such journalism. The word was used again in the body copy and in a subhead.

I had to think of the

young people reading this in the waiting rooms of their service shops. Hopefully your children will not see it! It may be okay with you and Donald Trump to use profanity, but it is not so with everyone. Car and Driver has become a filthy rag. Cancel my subscription. You are fired!

—Bruce Sandlin  
Auburn, AL

1. I am currently a subscriber.
2. I am disturbed by the swear words you use in a family publication.
3. My subscription ends soon and due to the foul language, I will not be renewing.

—Philip Marshall  
Novi, MI

You have been borderline all along but, in the July edition, in just the headlines and bold print, there were so many bad words (swearing) that I threw it in the recycling bin. Had to go retrieve it to find your address. I am not taking the time to cancel it. I will just recycle it. They have very low entry standards.

—Larry Forbes  
Le Grand, IA

To add to the stack of emails and letters on your "Bullsh!t" article, here are some more complaints:

- Turbocharged 2.0-liter inline-four EPA MPG estimates.
- Turbocharged 2.0-liter inline-four real-world MPG.
- Hybrid-anything EPA MPG estimates.
- Hybrid-anything real-world MPG.
- "Sport mode."
- Floating roofs.
- Work trucks with carpeting.
- Unavailable manual transmission.
- The size of "compact" trucks.
- Truck month.
- Attempting to figure out the engine size of a German car based on the model number.
- Jalopnik.

—Rev. Duncan  
McLellan  
Ankeny, IA

BS addendum:  
1. Keeping emergency flashers on in the rain in dense traffic.  
2. Fog lights every night.  
3. States' "move out of the right lane for emergency vehicles on the shoulder" laws. When is a cop going to give a ticket in an emergency?

—Blaise Kielar  
Durham, NC

**"OH MY GOSH, IN THE NAME OF ALL THAT IS HOLY, HOW CAN YOU USE SUCH LANGUAGE?! I AM APPALLED. WON'T SOMEONE PLEASE THINK OF THE CHILDREN?"**

One bullshit item you forgot to mention is the massive number of stop signs posted in residential areas. Many are simply rolled through and blown off. Yield signs would be a much better alternative and would probably be obeyed more often.

—Chuck Grapentine  
Madison, WI

The moment you go metric, refund the unused portion of my subscription.

—L. Hiller  
Lancaster, CA

**Sure thing, but the refund will be in euros—Ed.**





Swipe right.

2017 Focus ST. **We all drive.**



**Go Further**



squawking otherwise, but John is right on. We do need more common sense and more bobulation these days. I enjoy and appreciate John having the spine to say so. Send me another renewal mailer. I will respond with a multiyear subscription.

—Al Riddiough  
Marana, AZ

First was the article on NAFTA in the May 2017 issue ["Smashing NAFTA Apart Is Harder Than It Seems, Especially When You're Blind-folded"], a thinly disguised political article masquerading as automotive journalism. Now, John Phillips's column on bumper stickers in the July issue. Please. I get enough of this from every other media outlet in this country. I subscribe to C/D for car stuff. Kindly refrain from gratuitous commentary on politics, or at least wait until after my funeral.

—Larry Fry  
Great Bend, KS

Phillips, I put all my bumper stickers on a fridge. Your mom's!  
—Matthew Parr  
West Grove, PA

## BOSS WAGON

Regarding "Road Master" in the July issue, I thought that Buick was finally bringing us the antidote to the SUV with its new Regal TourX. It's low, sleek, sexy, and a wagon—and it has all-wheel drive. That's perfect. But the gray paint in your photos obscured

its transgression. I cannot understand why Buick would choose to add that black plastic crap to the wheel wells and lower body of such a beautiful car. It is totally out of place, like putting a mustache on the *Mona Lisa*. Opel created a beautiful, modern, and flowing design. Why does Buick muck it up? Please tell me that ugly plastic appliqué is optional.

—Daniel Lewis  
Northborough, MA  
**Who wants to tell this guy the plastic crap is required?—Ed.**

A. I'm holding out for the wood trim when available.  
B. I want to see a comparison test against an older version that had some real cargo room, like the '77 we had with the 403-cid V-8.

I think the station wagon really died because of child car-seat requirements making all that space no longer accessible.

—Erich Schroeder  
Houston, TX

## BACK AWAY

Regarding Jem Karunungan's Backfire in July, you guys back into your parking spaces for the same reason I do; nobody is chasing you now, but you never know about later!

—Eric Paulsen  
Plymouth, MN

**Actually, it's because a road warrior once backed a Bentley Mulsanne into a passing car. He's buried somewhere nearby—Ed.** ■

## Letter of the Month:

I've been reading your magazine since the '60s and after all these years, I realized that without the Backfires section, you would need to hire another writer to fill six pages every month. It's either that, or lean on the folks at WeatherTech to take out an even larger ad. Sneaky!

—Paul Stegeman  
Cold Spring, KY

Using Shell V-Power® NITRO+ Premium Gasolines and diesel fuels appropriately in all Car and Driver test vehicles ensures the consistency and integrity of our instrumented testing procedures and numbers, both in the magazine and online.

**Shell V-Power® NITRO+ Premium Gasoline**  
The Official Fuel of CAR AND DRIVER



**CUSTOMER SERVICE**  
Visit [service.caranddriver.com](http://service.caranddriver.com) or write to Customer Service Department, Car and Driver, P.O. Box 37870, Boone, IA 50037 for inquiries, requests, changes of mailing and email addresses, subscription orders, payments, etc.

**PERMISSIONS** Material in this publication may not be reproduced in any form without permission.  
**REPRINTS** For information on reprints and e-prints, please contact Brian Kolb at [Wright'sReprints](mailto:Wright'sReprints), 877-652-5295 or [bkolb@wrightsreprints.com](mailto:bkolb@wrightsreprints.com). To order digital back issues, go to your favorite app store. Car and Driver® is a registered trademark of Hearst Communications, Inc. Copyright 2017, Hearst Communications, Inc. All rights reserved.

## Editor-In-Chief Eddie Alterman

**Deputy Editor**  
Daniel Pund  
**Creative Director**  
Darin Johnson  
**Technical Director**  
Eric Tingwall  
**Managing Editor**  
Mike Fazioli  
**Design Director**  
Nathan Schroeder  
**Features Editor**  
Jeff Sabatini  
**Senior Editors**  
Tony Quiroga, Jared Gall  
**Reviews Editor**  
Josh Jacquot  
**Associate Managing Editor**  
Juli Burke  
**Copy Chief**  
Carolyn Pavia-Rauchman  
**Assistant Technical Editor**  
David Beard  
**Road-Test Editor** C. Benn  
**Copy Editor** Beth Nichols  
**Editor, Montana Desk**  
John Phillips  
**European Editor** Mike Duff  
**Carolinas Editor** Ezra Dyer  
**Staff Photographer**  
Marc Urbano  
**Art Assistant**  
Austin Irwin  
**Road Warriors** Zeb Sadiq, Maxwell B. Mortimer, Nathan Petroelje, Harry Granito

**Contributing Editors**  
Clifford Aiyeh, Csaba Csere, Fred M.H. Gregory, John Perley Huffman, Dave G. Johnson, Peter Manso, Bruce McCall, P.J. O'Rourke, Steve Siler, Tony Swan, James Tate, Dweezil Zappa

**Deputy Online Editor**  
Dave VanderWerp  
**Executive Online Editor**  
Erik Johnson  
**Testing Director** K.C. Colwell  
**Senior Online Editors**  
Joe Lorio, Mike Sutton, Kevin A. Wilson  
**Technology and Mobility Editor**  
Pete Bigelow  
**Environmental Editor**  
Bengt Halvorson  
**Consumer Editor** David Muller  
**Managing Online Editor**  
Scott Mosher  
**Buyer's Guide Executive Editor**  
Kirk Seaman  
**Buyer's Guide Senior Editor**  
Rich Ceppos  
**Buyer's Guide Managing Editor**  
Jennifer Misaros  
**Online Editors** Alexander Stoklosa, Andrew Wendler  
**Buyer's Guide Assistant Editors**  
Drew Dorian, Eric Stafford, Annie White  
**Associate Online Editors**  
Joseph Capparella, Greg Fink, Tony Markovich  
**Online Copy Chief**  
Rusty Blackwell  
**Online Copy Editors**  
Laura Sky Brown, Charles Dryer, Daniel Golson, Paul Livingstone  
**Online Staff Photographers**  
Alex Conley, Michael Simari  
**Online Production Manager**  
Luke Sellenraad  
**Assistant Online Production Manager**  
Chris Haponok  
**Buyer's Guide Production Assistant**  
Cory Wolfe  
**Online Production Designers**  
Sarah Larson, Jeff Xu  
**Online Production Assistants**  
Ron Askew, Brad Fick, Daniel Wilson  
**Community Engagement Manager**  
Jen Feeny  
**Photo Assistant**  
Charley M. Ladd  
**Product Director** Mark Quint  
**Interactive Design Director**  
Sam Conant  
**Interns**  
Ben Proffitt, Duncan Brady

**Editorial Office**  
1585 Eisenhower Place  
Ann Arbor, MI 48108  
**Printed in the U.S.A.**  
**Editorial Contributions**  
Unsolicited artwork and manuscripts are not accepted, and publisher assumes no responsibility for return or safety of unsolicited artwork, photographs, or manuscripts. Query letters may be addressed to the deputy editor.

## Publisher and Chief Revenue Officer Felix DiFilippo

**National Advertising Sales Director**  
Cameron Albergo  
**General Manager, Hearst Men's Group** Samantha Irwin

**NEW YORK**  
**East Coast Automotive Director**  
Joe Pennacchio  
**Assistant** Philippa Malloch  
**East Coast Digital Sales Manager**  
Brett Fickier  
**CHICAGO**  
**Integrated Sales Director**  
Rick Bisbee  
**Integrated Midwest Manager**  
Marc Gordon  
**Assistant** Yvonne Villareal  
**DETROIT**  
**Integrated Sales Director**  
Mark Fikany  
**Midwest Account Manager**  
Bryce Vredevoogd  
**Assistant** Toni Starrs  
**LOS ANGELES**  
**Integrated Sales Director**  
Anne Rethmeyer  
**Integration Associate**  
Michelle Nelson  
**Assistant** Richard Panciocco  
**SAN FRANCISCO**  
**Smith Media Sales, LLC**  
William G. Smith  
**DALLAS**  
**PR 4.0 Media** Patty Rudolph

**HEARST DIRECT MEDIA**  
Sales Manager Brad Gettelfinger

**MARKETING SOLUTIONS**  
**Executive Director, Integrated Marketing**  
Dawn Sheggy  
**Director, Integrated Marketing**  
Amanda Luginbill  
**Senior Manager, Integrated Marketing**  
Michael Coopersmith  
**Integrated Marketing Manager**  
Sandy Ramos  
**Art Director, Group Marketing**  
Elena Martorano  
**Marketing Coordinator**  
Vincent Carbone  
**Director, Digital Marketing**  
Kelly Martin  
**Senior Digital Marketing Manager**  
Lee Anne Murphy  
**Research Manager** Peter Davis

**THE BLEND LINE**  
**Executive Creative Director**  
Maury Postal  
**Production Director** Tia Devlin  
**Branded Content Editor**  
Damien Scott  
**Project Director** Meagan Maginot  
**Senior Manager, Media Strategy & Planning** Scott Topel  
**Accolades Manager, Media Strategy/Planning Coordinator**  
Rebecca Taron

**ADMINISTRATION**  
**Advertising Services Director**  
Regina Wall

**PRODUCTION**  
**Production/Operations Director**  
Chuck Lodato  
**Operations Account Manager**  
Elizabeth Cascone  
**Premedia Account Manager**  
Zachary Smith

**CIRCULATION**  
**Executive Director, Consumer Marketing** William Carter

**Published by Hearst Communications, Inc.**  
300 W. 57th Street  
New York, New York 10019

**President & Chief Executive Officer**  
Steven R. Swartz  
**Chairman**  
William R. Hearst III  
**Executive Vice Chairman**  
Frank A. Bennack, Jr.  
**Secretary**  
Catherine A. Bostrom  
**Treasurer** Carlton Charles

**HEARST MAGAZINES DIVISION**  
**President** David Carey  
**President, Marketing & Publishing Director**  
Michael A. Clinton  
**President, Digital Media**  
Troy Young  
**Chief Content Officer**  
Joanna Coles  
**Senior Vice President, Chief Financial Officer**  
Debi Chirichella  
**Publishing Consultants**  
Gilbert C. Maurer, Mark F. Miller

**INTERNATIONAL EDITIONS**  
Brazil, China, Greece, Spain  
**HEARST AUTOS**  
**President** Nick Matarazzo



# THAT BOSS



# WON'T PAY FOR ITSELF.

Switch to GEICO and save money for the things you love.

Maybe it's maintaining that vintage classic you own. Or the lease on the new one. Cars are what you love – and they don't come cheap. So switch to GEICO, because you could save 15% or more on car insurance. And that would help make the things you love that much easier to get.

**GEICO**<sup>®</sup>  
Auto • Home • Rent • Cycle • Boat

[geico.com](http://geico.com) | 1-800-947-AUTO (2886) | local office

Some discounts, coverages, payment plans and features are not available in all states or all GEICO companies. Homeowners and renters coverages are written through non-affiliated insurance companies and are secured through the GEICO Insurance Agency, Inc. Boat and PWC coverages are underwritten by GEICO Marine Insurance Company. Motorcycle and ATV coverages are underwritten by GEICO Indemnity Company. GEICO is a registered service mark of Government Employees Insurance Company, Washington, D.C. 20076; a Berkshire Hathaway Inc. subsidiary. © 2017 GEICO

# SECURING MOBILITY SUMMIT

IDENTIFYING SECURITY CHALLENGES AND  
INNOVATIONS IN THE NEW MOBILITY MOVEMENT

NOVEMBER 27, 2017 // LOS ANGELES CONVENTION CENTER

The Securing Mobility Summit at AutoMobility LA will tackle some of the hardest security challenges in the global transportation sector. We have invited world-class experts in security engineering, offensive network attack, industrial espionage, counterterrorism, robotics, virtualization, and resilient systems.

- › What an Air Force pilot, a tech pioneer, and a farmer can teach us about resiliency in combat, network security, and life
- › How Scuderia Ferrari F1 addresses its IT security challenges from training simulators to the track
- › Visualization of how a vehicle defends itself against a series of cyber attacks in real time

Attendees have exclusive access to cutting-edge exhibits and demonstrations, and will interact with our panel speakers and attendees. All Summit attendees receive a complimentary pass to the evening launch events of AutoMobility LA.

## SPEAKERS INCLUDE:

**EDDIE ALTERMAN**, Editor-in-Chief, Car and Driver

**TAMIR BECHOR**, Co-founder & CEO,  
CYMOTIVE Technologies

**FAYE FRANCY**, Executive Director, Automotive ISAC

**JEFF DEBROSSE**, Founder & CEO, NXTRobotics

**ARIUSZ MIKULSKI**, Sr. Research Scientist,  
Ground Vehicle Robotics, U.S. Army TRADEC

**LARRY PONEMON**, Chairman and Founder,  
Ponemon Institute

...AND MANY MORE

**REGISTER TODAY.**  
GO TO **SUITSANDSPOOKS.COM** TO  
RESERVE YOUR SEAT.\*

Use the discount code: **CARANDDRIVER**  
for **10% off** the registration fee.\*\*

\*Limited to 300 attendees.

\*\* Offer expires October 15, 2017



# Upfront



*Reveal of the Month*

## KING CUSH

**ROLLS-ROYCE SHOWS WHO'S BOSS WITH AN ALL-NEW PHANTOM.** *by Mike Duff*

■ **ROLLS-ROYCE'S PHANTOM ENJOYS** the longest-lived model name on the market today, but new versions of the spectral range topper don't come along very often. The first arrived in 1925, and, with fairly substantial furloughs between some generations, this new version is only the eighth to bear the name. Its design sticks close to the shock and awe engendered by the previous iteration—the first produced under BMW's control of Rolls-Royce—but the car is almost entirely new. The mission, too, is hardly changed: Appeal to those for whom even a Bentley Mulsanne is a little common.



**10%**  
Rolls-Royce sold 4011 cars globally in 2016, 389 of which were Phantoms.

### ▼ CHASSIS

The Phantom is the first car to sit on Rolls-Royce's new aluminum spaceframe, officially and unselfconsciously called the Architecture of Luxury. Rolls sunk a lot of money into the platform and will use it beneath all of its upcoming models, including the crossover known as the Cullinan. The wheelbase and overall length shrink slightly relative to the outgoing car's, but the Phantom remains a mammoth vehicle. Even with the shorter standard wheelbase, it's longer than a Chevrolet Suburban.

Rolls focused on improving refinement, claiming that the Phantom will be the quietest car in the world for those lucky enough to be sitting in it. Although the new body shell is both lighter and 30 percent stiffer than the old one, the claimed 5840-pound base curb weight is actually higher than that of the outgoing car, as savings have been offset by more equipment. This



001

**001**  
THE REAR SEATS ARE ANGLED SLIGHTLY INWARD TO REDUCE NECK STRAIN SHOULD THE OCCUPANTS WANT TO LOOK AT EACH OTHER.

includes triple glazing on all windows and some 300 pounds of sound insulation. Rolls claims this car is so much quieter than its predecessor that, when engineers reviewed acoustic test results, they had to check that their instruments were correctly calibrated.

The car sits on an aluminum-intensive suspension with electrically disconnecting anti-roll bars, front and rear, and a high-capacity air spring at each corner. Magnetic Carpet Ride uses a camera system to help prep the adaptive dampers for bumps, and rear-axle steering improves the barge's maneuverability at low speeds.

#### ▼ DESIGN

Despite a years-long creative process that included sending the team on a mind-clearing sabbatical to contemplate the essence of luxury, Rolls-Royce has managed to make the new Phantom look, at first glance, very similar to its predecessor. Detailing now includes what design director Giles Taylor calls a waft line at the base of the doors, and the stainless-steel radiator grille stands even taller, though the basic proportions and rear-hinged back doors remain intact. Other neat details include headlamps with frosted-glass internals and laser main-beam elements.

#### **002**

A strip of stainless steel along the sill identifies the long-wheelbase Phantom. You know, in case the 235.8-inch length didn't get the point across. That's 8.3 inches longer than the standard car.



#### ▼ INTERIOR

The Phantom's cabin is still the feature that really gets billionaires' check-signing fingers itching. As with the previous car, much is deliberately old-fashioned. It's pleasingly incongruous that the most expensive production sedan in the U.S. still uses rotary mechanical controls for heating and ventilation. The driver still faces three traditional instrument dials, none of which is as vulgar as a rev counter. Instead, there's a "power reserve" meter. Although

002







## ▼ POWERTRAIN

At the sharp (but blunt) end sits a new twin-turbocharged 6.8-liter V-12, developed from the 6.6-liter unit fitted to the more modest Wraith and Ghost. The new engine matches the 563-hp output of its fractionally smaller sister and represents a 110-horse improvement on the outgoing Phantom's naturally aspirated 12. But the real headline is the 664 pound-feet of torque—an increase of 133—available from just 1700 rpm. This is marshaled through an eight-speed ZF automatic transmission and sent exclusively to the rear wheels. Engineers considered offering all-wheel drive but discounted it as not being sufficiently refined. To ensure that things don't get too exciting, the torque output is limited in first and second gears. While Rolls-Royce used to regard performance claims as ungentlemanly, it's now happy to boast. We're told that the new car will hit 62 mph in 5.3 seconds and run into its guv'nor at 155 mph. Engineering director Philip Koehn says an unrestricted prototype exceeded 186 mph at the Nardò high-speed testing facility in Italy.

## BEVERAGE SERVICE

The day has finally arrived when a back-seat champagne fridge and flutes are inadequately luxurious. The new Phantom of course still offers the means to store, chill, and serve your rotten-berry juice but complements it with a custom-designed whiskey decanter and matching glasses. The fridge dials 911 if stocked with PBR.



Rolls-Royces are traditionally designed from the back seat forward, the new Phantom's most striking interior feature is at the front of the car: a glass dashboard that has been designed so that individually commissioned artwork can be positioned behind it. And don't worry, insipid oligarchs; the company will help with inspiration if none is forthcoming. One example Rolls showed us was a three-dimensional depiction of the "DNA" of "aspects of the patron's character" rendered in 24-karat gold. Classy.

Despite the car's increased emphasis on driving dynamics, most Phantom buyers will continue to experience their cars from the rear, and the back of the cabin remains very special indeed. There are still folding picnic tables—now power operated—and optional 12-inch displays built into the front seatbacks. Pretty much all non-glazed surfaces are covered in either hide, wood, or ankle-deep carpeting. As before, the range of options will be, effectively, infinite. If a buyer can imagine a color or trim material, however unlikely, Rolls will attempt to incorporate it.

## ▼ HOUSEKEEPING

While lesser Rolls-Royces are often bought on credit, we're told that Phantom buyers tend to have the sort of liquid wealth that means any indulgence is no more than a Zero Halliburton suitcaseful of cash away. As such, its yet-undisclosed price tag is unlikely to be of great concern, even if it adds a healthy supplement to the \$420,000 base of the outgoing model. Most buyers will likely augment that with customization and bespoke componentry. Sales start immediately, with the first deliveries in early 2018.



WHAT? WHEN YOU READ "ART," YOU THINK OF MONET AND BOB ROSS? ENJOY YOUR LINCOLN. PROLE. THE PHANTOM'S DASHBOARD HAS ENOUGH DEPTH TO ACCOMMODATE SCULPTURAL WORKS AS WELL AS PAINTINGS. ACTUALLY, DON'T CALL IT A DASHBOARD BECAUSE "DASH" SOUNDS FRANTIC AND "BOARD" CAN BE PREFIXED WITH "CLAP." THE PHANTOM NOW HAS A "GALLERY." LOOKING AT THESE WORKS, GALLERY SOUNDS LESS PRETENTIOUS AND MORE, WELL, ACCURATE.

# TUBULAR DUDE

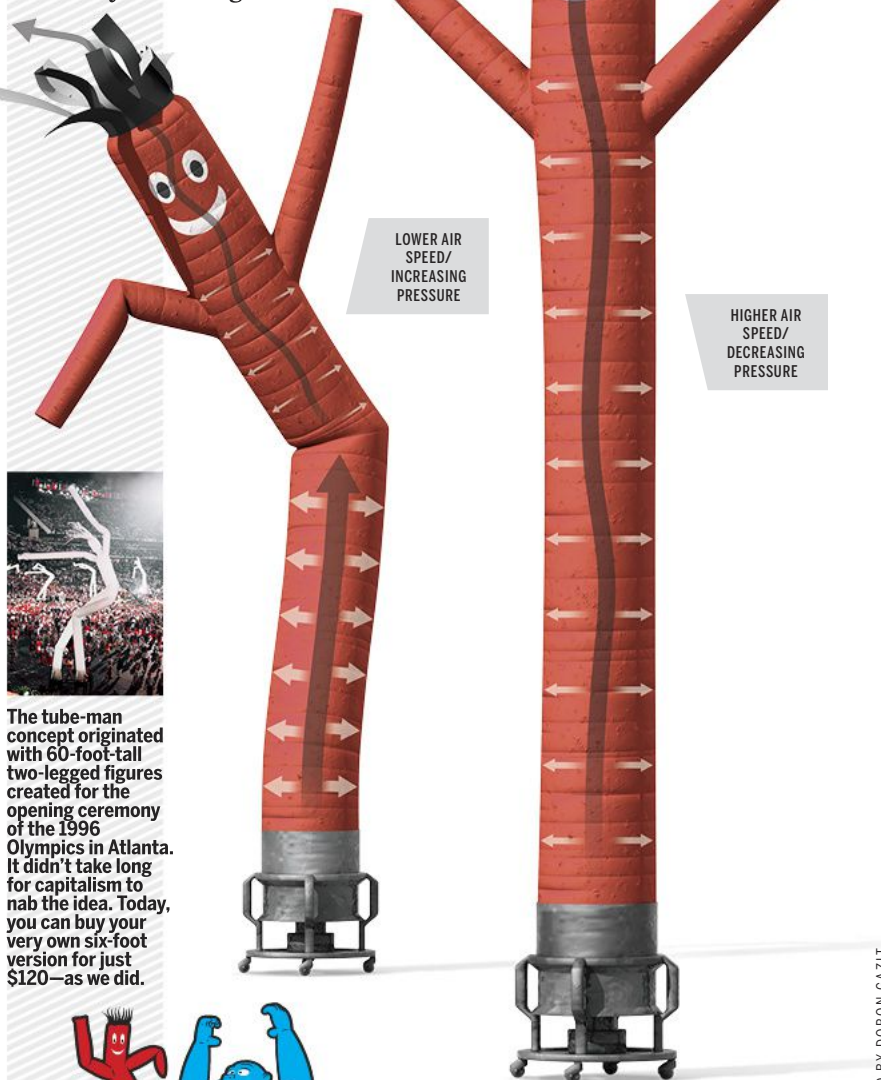
HOW THAT GLORIFIED WINDSOCK PULLS OFF THOSE FRESH POP-AND-LOCK DANCE MOVES. *by Eric Tingwall*

**BECAUSE A 1998 PLYMOUTH BREEZE** no longer turns heads as it once did, used-car salesmen are masters of countless attention-grabbing gimmicks. Among the tactics, no shtick is simultaneously as eye-catching and absurd as the spastic flail of a perky nylon tube with vaguely human features.

Known as a Tall Boy, Fly Guy, AirDancer, or, more commonly, “that ridiculous thing,” this used-car-lot staple might be the pinnacle of lowbrow marketing, right up there with “buy a car, get a gun.” But there’s a load of no-nonsense science behind the tube man’s random yet seemingly unending pop-and-flop routine. There’s also some brilliance in the simplicity of the thing. A conventional fan turning at a constant speed blows air up through the lightweight nylon sleeve, resulting in pressure fluctuations inside the tube sufficient to incite an AirDancer’s signature samba.

The behavior is explained by Bernoulli’s principle, a fluid-dynamics tenet derived from Newton’s second law of motion. It states that as the velocity of a fluid increases, its pressure decreases. Initially, the moving air, which behaves as an incompressible flow in the open-ended AirDancer, creates enough pressure to inflate the tube. As the tube stands more upright, the turbulent air inside flows more freely and its speed increases until the decreasing pressure can no longer support the mass of the nylon fabric. The collapsing material creates a kink in the tube, a constriction that causes the air speed to temporarily slow and the pressure to rise again. The elevated pressure drives the bend upward, sending a shimmy through the AirDancer and restarting the cycle.

Used inside a building, a tube man cycles in an almost-repeatable pattern. Outdoors, its interactions with the wind give the inflatable its erratic flail. That is to say, an AirDancer is excited by a breeze to get you excited about that Breeze.



The tube-man concept originated with 60-foot-tall two-legged figures created for the opening ceremony of the 1996 Olympics in Atlanta. It didn't take long for capitalism to nab the idea. Today, you can buy your very own six-foot version for just \$120—as we did.

## THRILLA VS. GORILLA



When it comes to selling cars, you can't talk AirDancers without mentioning the inflatable gorilla on the neighboring lot. Which draws more shoppers? Our Traffic-Generating Factor (TGF) predicts the increase in traffic a dealer can expect by putting an inflatable on the lot.

A 20-foot-tall red tube man starts with a metaphorical leg up on a 20-foot blue gorilla due to red light's longer wavelength ( $2.29 \times 10^{-6}$  feet versus  $1.54 \times 10^{-6}$  feet), but it's not even a competition once you factor in the AirDancer's ability to pitch and roll about its base, effectively quadrupling its TGF.

$$\text{TGF} = \frac{H \times 2^{\text{DOF}} \times 10,000,000 \times W \times N_{\text{TOYOTA}}}{D^2 \times N_{\text{PTCRUISER}}}$$

H = Height of the inflatable, in feet  
DOF = Number of degrees of freedom to allow motion  
W = Wavelength of light for the color of the inflatable, in feet  
N<sub>TOYOTA</sub> = Number of Toyotas on the lot  
D = Distance from adjacent road, in feet  
N<sub>PTCRUISER</sub> = Number of PT Cruisers on the lot



# The All-New CAMRY



## \*Not available in beige.

There's nothing wrong with beige. It's a perfectly legitimate color for an armchair or a pantsuit. It's just not right for the more aggressive, all-new 2018 Camry. So we made an executive decision: no beige exterior. Not even a light khaki. It is, however, available in ten colors, like Ruby Flare Pearl.<sup>1</sup> Camry has returned with a bit of attitude. And it's a rather dramatic departure from its past. So if beige is your thing, you're kind of out of luck.



**Let's  
Go  
Places**

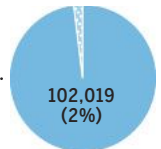
# INFRASTRUCTURE RUPTURE

RATING THE TERRIBLENESS OF AMERICAN ROADS. *by Benjamin Preston*

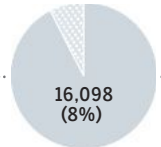
**YES, THE ROADS YOU DRIVE ON PROBABLY ARE THAT BAD.** The American Society of Civil Engineers (ASCE) issues a quadrennial infrastructure report card that covers everything from aviation, rail, and seaports to drinking water and public parks. This year, America's infrastructure earned a D+ overall, with roads rating a D and bridges meriting a C+. The backlog of urgent projects across the country is immense. The ASCE cites a \$2 trillion funding gap as a major cause of decay. A cornerstone of that gap is our federal fuel tax, 18.4 cents per gallon on gasoline and 24.4 cents on diesel, which hasn't been raised in nearly 25 years. Several states—most recently California, Indiana, Montana, South Carolina, and Tennessee—have increased their own fuel taxes. But how much of that revenue is reserved for road repairs and how much is available for expenses such as public-transit projects and state-police budgets varies significantly, and each penny's power depends on where it's spent. Weather patterns, population density, and heavy-truck traffic all impact road conditions, and the cost of repairs differs state to state, too. Here's how bad our roads really are, and how much money your government is collecting from you to try to fix them:

Alabama

MILES OF  
PUBLIC ROADS  
(% POOR  
CONDITION)



NUMBER OF  
BRIDGES  
(% STRUCTURALLY  
DEFICIENT)



GASOLINE TAX,  
CENTS/GALLON

- ◆ 40.0¢+
- ◆ 30.0–39.9¢
- ◆ 20.0–29.9¢
- ◆ 0.0–19.9¢

22.9¢

New  
Jersey

New  
Hampshire

Nevada

Nebraska

Montana

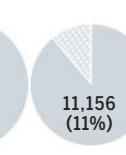
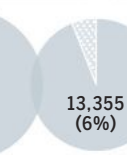
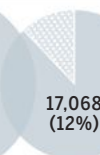
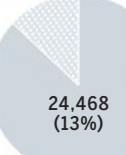
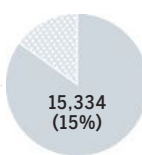
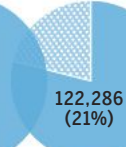
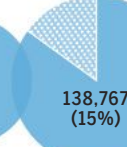
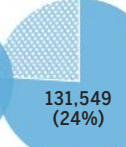
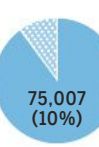
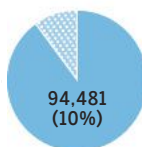
Missouri

Mississippi

Minnesota

Michigan

Massachusetts



37.1¢

23.8¢

33.5¢

28.2¢

27.8¢

17.3¢

18.8¢

28.6¢

40.4¢

26.5¢

New  
Mexico

New  
York

North  
Carolina

North  
Dakota

Ohio

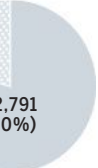
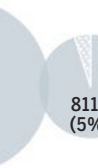
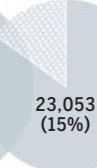
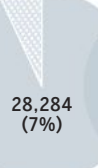
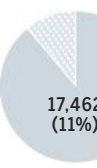
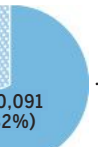
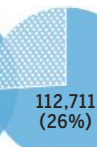
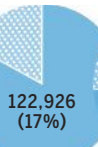
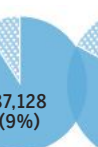
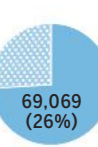
Oklahoma

Oregon

Pennsylvania

Rhode  
Island

South  
Carolina



18.9¢

43.9¢

34.6¢

23.0¢

28.0¢

17.0¢

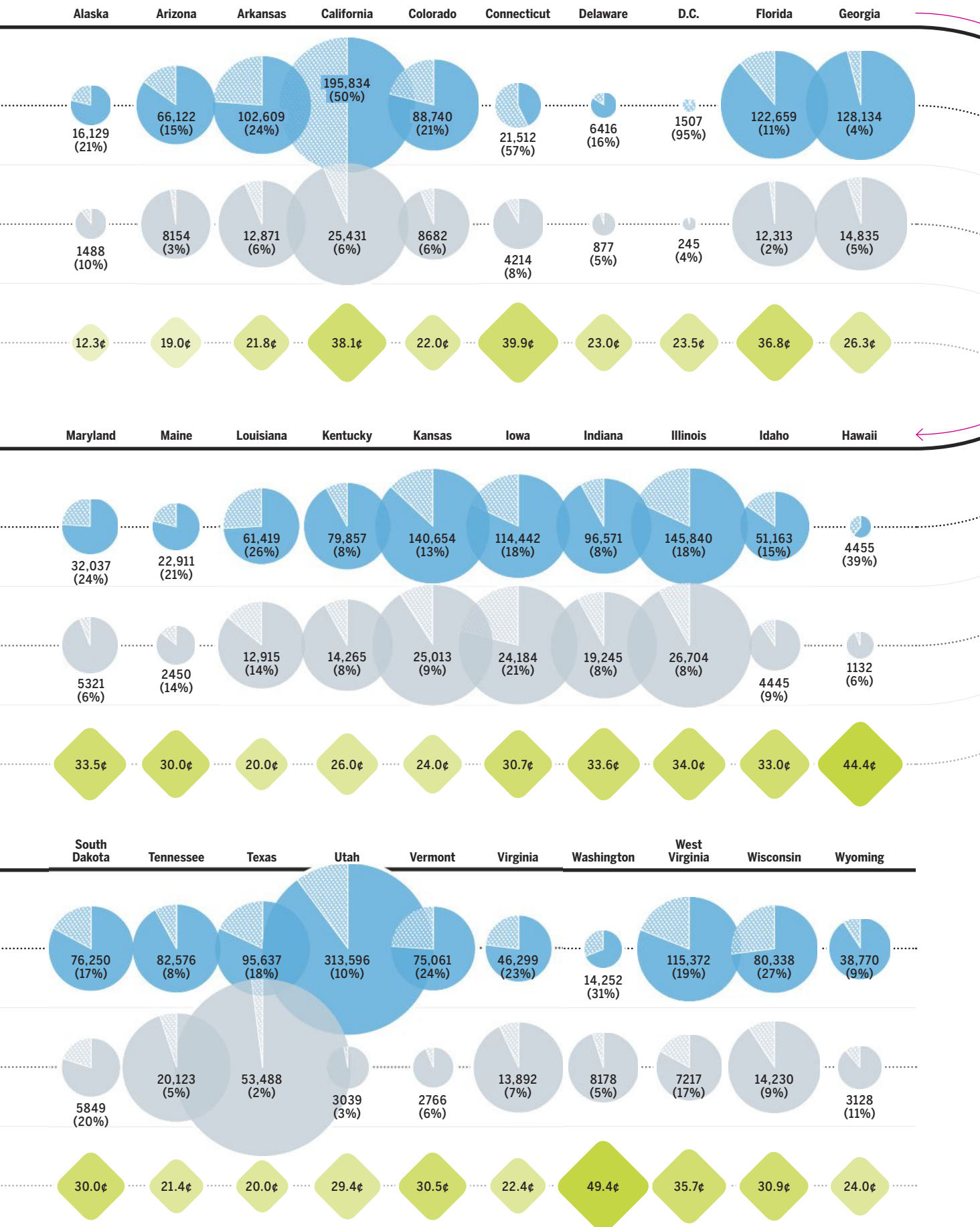
31.1¢

58.2¢

34.0¢

16.8¢







*Patron Saints*

# OILED UP

LUCAS DOLLARS MIGHT LUBRICATE MORE RACING THAN LUCAS OILS.

by John Pearley Huffman

**IN CORONA, CALIFORNIA**, there's a massive, wooden, camel-humped building that Sunkist erected during the 1920s in which to squeeze lemons. There, on the lower level of the old citrus-processing plant, Lucas Oil Products now manufactures many of its 272 different additives, fuel treatments, and lubricants. But upstairs are the offices and studios of the Lucas-owned I-10 Race Promotions and MAVTV, likely the widest-spread motorsports and motorsports media organizations in America.

"We were sponsoring tractor pulls and late models long ago. Both series fell apart," explains Indiana-born Forrest Lucas, 75, who incorporated Lucas Oil in 1989 and, with his wife, Charlotte, owns the interconnected enterprises. "One guy got to doing dope, and the other guy—I don't know what happened to him. We picked the series up, cleaned them off, and put them on television."

That was in 2004. Since then, I-10 Race Promotions has grown its portfolio to eight grassroots motorsports series, each of which now has "Lucas Oil" preceding its name: ASCS Sprint Car Dirt Series, Drag Boat Racing Series, Late Model Dirt Series, Midwest Latemodel Racing Association, Modified Series, Off Road Racing Series, Pro Motocross Championship, and Pro Pulling League.

## STILL WATERS RUN SHALLOW

Lucas is now building its own venues, among them a stunningly sited off-road course near the Estero Beach resort in Ensenada, Baja California. But the most spectacular is Lucas Oil Speedway in Wheatland, Missouri, which includes a three-eighths-mile dirt oval, an off-road course, and the world's first purpose-built lake for drag-boat racing. The latter is some 4000 feet long and about eight feet deep, with shores designed to mitigate wakes to help the water calm after each race. With boats that can exceed 260 mph, that matters.

Beyond that, there's the NHRA Lucas Oil Drag Racing Series, the Lucas Oil NHRA Nationals in Brainerd, Minnesota, the NASCAR Camping World Truck Series Lucas Oil 150 in Phoenix, and support for individual road racers, stock cars, drifters, monster trucks, snowmobiles, aerobatic airplanes, and the occasional Indy car.

Lucas Oil was already providing programming to the floundering MAVTV cable channel when it took control of and refocused it in 2011. "We moved toward motorsports because that's our background," says Bob Patison, executive vice president of Lucas Oil and president of MAVTV. "And when Speed went away and converted to Fox Sports 1, we saw an opportunity to step in and fill a need for motorsports programming."

Lucas Oil's privately held companies won't reveal their fiscal commitment to racing, but it's hard to imagine that the outlook for many of its series would have been rosy without Lucas's backing. "When we initially took them over," Patison says, "they all required subsidy from Lucas Oil to survive. A number have now become profitable. There are a couple that are right at that breakeven point. And there are a couple that are still limping along that need some help."

And yet, Lucas's highest profile marketing move was purchasing the naming rights for the Indianapolis Colts' NFL stadium for a reported \$121.5 million. Lucas Oil Stadium opened in 2008. "There are a lot of people who don't watch racing," Forrest Lucas sighs. "I know that."





# BUILT BY MECHANIX



FASTFIT®  
ELASTIC  
CUFF

ORIGINAL®  
SEAMLESS  
PALM

M-PACT®  
IMPACT  
PROTECTION

**THE TOOL THAT FITS LIKE A GLOVE®**

US: 800.222.4296 | [WWW.MECHANIX.COM](http://WWW.MECHANIX.COM)

#mechanix   





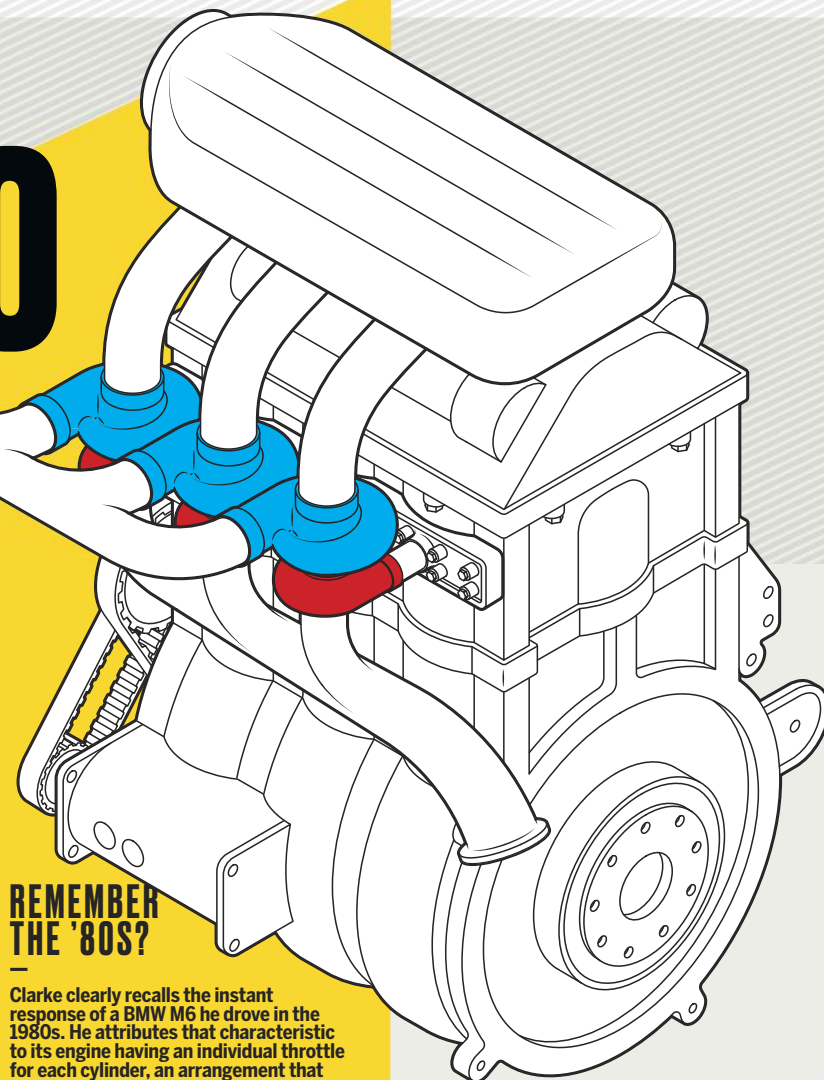
# TURBO DOGS

**TWO VETERAN ENGINEERS HOPE TO REVOLUTIONIZE ENGINE DOWNSIZING WITH ADDITIONAL TURBOS AND THROTTLES.** *by Csaba Csere*

**■ DOWNSIZED TURBOCHARGED** engines have become a cornerstone in the car industry's effort to increase fuel economy. And as CAFE standards push us toward a 54.5-mpg fleet average, engines are bound to get even smaller and turbo boost even higher. Such radically downsized engines can be strong at full throttle but tend to be sluggish from a stop.

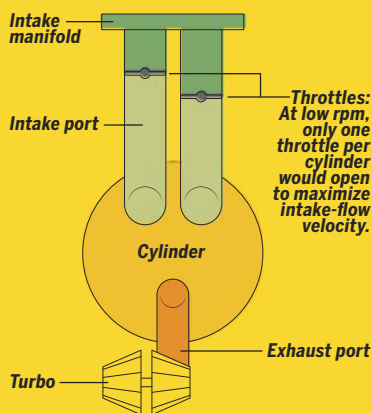
Automakers are exploring plenty of solutions to this problem, including staged turbos, variable-geometry turbines, and electrically driven compressors. Jim Clarke has a more radical idea. Thus far, it's all theory—no prototype has been built or tested—but it's a theory with 27 claims covered by a patent and with a weighty résumé behind it. Over the course of a long career at Ford, Clarke was responsible for the modular V-8 and the Duratec V-6, including the Yamaha-built V-8 and Aston Martin V-12 variants. He was also engineering vice president at Navistar, the heavy-truck manufacturer that owns International Trucks, and he headed up special projects for Kohler Engines. His technical partner, Dick Fotsch, is a past president of engine divisions at Navistar and Kohler. Combined, the two have some 60 years of executive-level engineering and management experience. (Full disclosure: Clarke was this author's manager decades ago at Ford.)

The first element of the design, which they call "synergistic induction and turbocharging," is to place individual throttles—two per cylinder, one for each intake port—right next to the cylinder head. "Between the throttle and the intake valves, the typical engine has an intake-manifold volume roughly equivalent to the engine displacement," Clarke says. "That takes time to fill when you open the throttle." His configuration allows the cylinders to fill much more quickly, rapidly generating full torque and a maxi-



## REMEMBER THE '80S?

Clarke clearly recalls the instant response of a BMW M6 he drove in the 1980s. He attributes that characteristic to its engine having an individual throttle for each cylinder, an arrangement that reduced the amount of air between the throttle and the intake valve. This engine concept takes that premise a step further.



mum dose of high-energy exhaust gas. Exploiting that exhaust is the next key idea.

"The closer you put a turbocharger to the exhaust valve, the more energy reaches the turbine to accelerate it," explains Clarke. Therefore, the synergistic engine has an individual turbo for each cylinder placed as close as possible to the exhaust valves. These turbos can be smaller than they'd be on a single-turbo engine—20 percent smaller in size (50 percent less flow) on a three-cylinder. Smaller turbos mean less rotational inertia, allowing these tiny blowers to spool up more quickly than most current setups. Clarke estimates that his synergistic engine concept could eliminate perceptible turbo lag altogether.

The theory seems promising, but the system requires considerable parts multiplication. On the three-cylinder example, there would be three turbos and six throttles, instead of one each, as well as additional plumbing to interconnect the individual intake and exhaust passages. Three small turbos, of course, might only cost 50 percent more than one large one, and few of the other components are particularly complex or exotic. The question is how well the concept's performance and cost compare with other lag-mitigating techniques—which are not inexpensive, either. But innovation is rarely cheap.



# CITY. SLICKER.

Zip through downtown. That tight alley. And into that parking spot. Introducing the brand-new 2017 Nissan Rogue Sport. The newest member of the Rogue family, tailored for the hustle.

**TAKE ON TODAY**



**THE BRAND-NEW 2017 ROGUE SPORT™**

## THE ROGUE FAMILY



**The brand-new 2017 Rogue Sport™**  
starting at just \$21,420

**The 2017 Rogue™**  
starting at just \$23,820

As Shown 2017 Rogue S FWD Starting MSRP \$23,820. As Shown \$27,990 MSRP 2017 Rogue Sport SL AWD, other optional equipment shown, see dealer for details. 2017 Rogue Sport S FWD Starting MSRP \$21,420. Price is Manufacturer's Suggested Retail Price (MSRP). MSRP excludes tax, title, license, options and destination charge. Dealer sets actual price. See dealer for details. Always wear your seat belt, and please don't drink and drive. ©2017 Nissan North America, Inc.



**Innovation  
that excites**

# A few years ago, at a Kruse auction, I sat beside a bald bidder who'd already lost precious portions of his mind over a 2007 Ford Mustang GT-H, the black-and-gold Hertz clone. "I will get this car," he assured, and he did,

but for a sum greater than the Mustang's original sticker. I asked about applicable auction fees and sales tax. "Oh, no sales tax," he said. "Montana plates."

Well, now I live in Montana and finally grasp the BB's (bald bidder's) boast. Right now, my adopted state is enjoying a humming cottage industry of people who, for fees ranging from \$174 (no attorney) to \$1500 (an earnest attorney), will create a limited liability company, or LLC, for nonresidents. That LLC is a "legal entity" and doesn't need to stipulate your name or state of residency. In turn, your LLC can buy, well, let's call it a "company car" that happens to be a pearlescent-mauve McLaren 570S costing \$250,000. If the BB had purchased that McLaren in his state of residency—let's say in Michigan—he'd pay 6 percent sales tax, or \$15,000. But if he'd bought the car through his Montana LLC, he'd pay zero sales tax because Montana doesn't collect any. Of course, once the BB had his car, he'd have to bolt on funky Montana plates, front and rear.

Let me be clear: This is 100 percent legal in Montana. The law was established in 1991. But we're dealing with state law here, not federal, so whatever laws Montana enacts may not jibe with those of, say, California. In fact, there are state regulators in a foaming tizzy about their inability to collect sales taxes that have been nullified by

Montana's LLCs. Not only California but also Arizona, Colorado, Maryland, Massachusetts, Michigan, Nevada, Oregon, and Washington. Some have set up tip lines so that citizens can report suspected tax cheats. Last year, in fact, Californians reported 260 Montana plates to the CHiPs, who can say, "Please prove your established state of residency." Montana-plated vehicles are said to be prized in California, where they can often obviate smog checks, unless the car is used primarily in California. Of course, who knows if it is?

The thing is, do you plan to insure your McLaren? Many insurers view LLCs as week-old fish. If you're ethical, you'll tell your agent that your true state of residency is Michigan, that you'll drive the McLaren in Michigan and will store it in Michigan, but the car will bear Montana plates in the name of a Montana LLC. "Oh, really?" says your agent, pointing to the clause that says, "False statements on your insurance application are grounds for denying a claim." Now what? You drive your *uninsured* McLaren to Mar-a-Lago for Vlad's big birthday bash? Have you seen the valets at that place?

Avoiding taxes and evading taxes are not conjoined twins, because one of them can put you in prison. If your state decrees that it has primary jurisdiction and that you've formed the Montana LLC for the

sole purpose of evading taxes, you've evaded taxes. They'll apply the legal test of "piercing the corporate veil." Did you, in good faith, establish your LLC as a business to make a profit? If not, it may be judged a shell corporation. Go tell Judge Judy, but you'll likely dole out more than the \$15,000 you saved in the first place.

I contacted attorneys Jared Heggen and John Bennett in Missoula, Montana, both substantial players in this business. Heggen can set you up with an LLC to buy a luxury vehicle—e.g., our mythical McLaren—for \$1495, depending on services rendered during a mandatory one-hour consultation. Heck, I spend an hour just getting out of bed. Heggen told me: "We provide guidance whether the client would be compliant with tax and registration laws in his state of residence. Plus, we require him to seek independent counsel in his state." Heggen enforces that by making you sign a notarized promise.

Heggen went on to describe a scenario unknown to me. "If the client's state of residence has a sales- and/or use-tax *clearance test period* [my emphasis], I could assure him he'd not incur sales or use tax, provided the car was shipped to a Montana storage facility. The vehicle then must stay out of the state of residence during the test period." For some states, such as California, Bennett says that can mean storing your luxury vehicle outside the state for up to 12 months but with 30-day windows for servicing. "It's complicated. Florida and Massachusetts demand six months. Arizona, 90 days. Unless you spend a half million on a car, this is not for you," he warns. By the way, Bennett drives a Ferrari F430 Spider and a 1967 Fiat Dino Spider.

Folks often establish Montana LLCs because they're furious over their state's steep taxes. Of course, the way to fix that is not to evade the tax but to change the law.

I hope the BB is right now performing burnouts in his Mustang and not studying contract law at Leavenworth. But I'll tell you this: I plan to invest in Montana storage facilities, to which I'll have all the keys. I've never driven a 570S. ■



# John Phillips





*"I've gotten many compliments on this watch. The craftsmanship is phenomenal and the watch is simply pleasing to the eye."*

—M., Irvine, CA

*"GET THIS WATCH."*

—M., Wheeling, IL

**Back in Black:**  
The New Face of  
Luxury Watches  
"...go black. Dark  
and handsome  
remains a classic  
for a reason"

— Men's Journal

## I'LL TAKE MINE BLACK...NO SUGAR

In the early 1930s watch manufacturers took a clue from Henry Ford's favorite quote concerning his automobiles, "You can have any color as long as it is black." Black dialed watches became the rage especially with pilots and race drivers. Of course, since the black dial went well with a black tuxedo, the adventurer's black dial watch easily moved from the airplane hangar to dancing at the nightclub. Now, Stauer brings back the "Noire", a design based on an elegant timepiece built in 1936. Black dialed, complex automatics from the 1930s have recently hit new heights at auction. One was sold for in excess of \$600,000. We thought that you might like to have an affordable version that will be much more accurate than the original.

**Basic black with a twist.** Not only are the dial, hands and face vintage, but we used a 27-jeweled automatic movement. This is the kind of engineering desired by fine watch collectors worldwide. But since we design this classic movement on state of the art computer-controlled Swiss built machines, the accuracy is excellent. Three interior dials display day, month and date. We have priced the luxurious Stauer *Noire* at a price to keep you in the black... only 3 payments of \$33. So slip into the back of your black limousine, savor some rich tasting black coffee and look at your wrist knowing that you have some great times on your hands.



*27 jewels and hand-assembled parts drive this classic masterpiece.*

**An offer that will make you dig out your old tux.**

The movement of the Stauer *Noire* wrist watch carries an extended two year warranty. But first enjoy this handsome timepiece risk-free for 60 days for the extraordinary price of only 3 payments of \$33. If you are not thrilled with the quality and rare design, simply send it back for a full refund of the item price. But once you strap on the *Noire* you'll want to stay in the black.

**Exclusive Offer—Not Available in Stores**

**Stauer Noire Watch \$399†**

Your Cost With Offer Code **\$99 + S&P Save \$300**

**OR 3 credit card payments of \$33 + S&P**

**1-800-333-2045**

**Offer Code: NWT331-06**

You must use this offer code to get our special price.

† Special price only for customers using the offer code versus the price on Stauer.com without your offer code.

**Stauer®**

14101 Southcross Drive W.,  
Dept. NWT331-06  
Burnsville, Minnesota 55337  
www.stauer.com



- 27-jewel automatic movement • Month, day, date and 24-hour, sun/ moon dials • Luminous markers • Date window at 3' o'clock
- Water resistant to 5 ATM • Crocodile embossed leather strap in black fits wrists to 6½"-9"

*Stauer...Afford the Extraordinary.™*



# Yes, fine, I admit it: I stole the story before the rest of the staff even knew there was something to steal. The drive of the highly anticipated second-generation Ford Raptor, the truck the company had teased us with for nearly two years

after its auto-show unveiling, was finally nearing. By the time anyone in the office knew that Ford would host a California media drive of the dust devil, I'd been working for months to avoid that event. Instead, I asked the company to arrange that the following items be delivered for me to a shabby parking lot in downtown Las Vegas: A \$63,005 ruby-red Raptor, a regular 4x4 Ford F-150 to serve as a photographer's platform/abuse taker, and a couple of spare wheels and tires.

Mind you, I could provide the company with no evidence of any personal experience driving quickly through the desert without killing man or machine. And Ford was only vaguely aware of my plan to follow the route of the early Mint 400 races.

What I didn't tell Ford or my colleagues was that I had ulterior motives. Yes, beyond the opportunity to escape the world on the day after the presidential election. Beyond even the opportunity to pee in the desert, one of life's underrated joys.

I had unfinished business dating back 23 years—or 33 years, if you want to be picky about it. And now, because my name is rendered below in a text size typically reserved for MEN WALK ON MOON headlines instead of the modest type of a byline, I'm going to tell you all about it.

I must have been about 12 when Uncle Doug brought to my childhood home

enough old car magazines to construct a fort in my basement. My aunt was eager to declutter her house and he thought I might like them. He didn't know the half of it. I buried myself in them, pored over them. From then on, I maintained a subscription to one or another car magazine

until the time that I started writing for car magazines. He also didn't know that he'd left a couple of nudie magazines in the stack. I liked those plenty, too.

Uncle Doug led the kind of life that could give a pre-teen boy hope that adulthood didn't have to suck. It could be fun. It could be thrilling. He seemed so confident. He seemed so successful. He was funny. He would crack jokes around the dinner table at family gatherings about acid flashbacks (he graduated from high school in 1967). I knew even back then that he'd been sent to military school in Florida beginning in his middle school years. I could only imagine what ballsy, spectacularly cool things he must have done to end up there.

And always there were fast things. It started with a minibike and a go-kart that he would race around the circle drive of the family home. Once, another kid from the Detroit side of the municipal border near where he lived threatened to steal the go-kart. Doug said to him, "We could fight for it or we could take turns riding it

instead." They became lifelong friends and occasional business partners. He street-raced the '67 Camaro he'd received for high-school graduation on Woodward and the then-desolate Telegraph Road in suburban Detroit. Through college he took to legally drag-racing one or another of his built Chevy Novas. Even while his business grew and he became a husband and father, he raced. Now short-track off-road races in Wisconsin. Somewhere in there he tried offshore boat racing but found land more to his liking.

By the time I'd become a young man and had recently lost my father, Uncle Doug was knee-deep in desert racing, driving Bugs and buggies throughout the Southwest and running the Baja 1000 at least a few times. It was at a family gathering that he asked if I wanted to co-drive with him at an upcoming race.

This was when I was too young to know that the answer should always be yes; that you should always do it, whatever it is. I did worse than decline the invitation. I let it just fade away as the weeks passed. I don't know why. The offer never came again. And within a few years, Uncle Doug closed his business, retired early, and hung up his helmet. He was happy enough to attend NASCAR races with the friend who'd once tried to steal his go-kart, plus their acquaintances, team owners Bill and Gail Davis.

At a family Christmas party in 2005, he seemed intent on telling me that he enjoyed the car magazine that I'd helped launch with one Eddie Alterman and that he forgave me for preferring Formula 1 racing to NASCAR. Later, I would find out that when he said those things, he'd just been diagnosed with pancreatic cancer and that it had already spread to his liver. The doctor gave him three months. He took five.

During a break in photography of the Raptor, I told our photographer and art director that I needed a chance to just drive the truck on my own. Blasting along one of the old Mint 400 trails in this superior machine, I felt invincible. And I drove faster than I should have, leaving a dust storm in my wake, until I ran out of trail. ■



# Daniel Pund



# GET MORE OUT WITH EVERY OIL CHANGE

HARMFUL  
METAL  
PARTICLES

SLUDGE

PERFORMANCE-  
ROBBING  
DEPOSITS

VARNISH

FIVE MINUTES. THAT'S ALL IT  
TAKES TO SAFELY FLUSH OUT,  
ENGINE-DESTROYING SLUDGE,  
DEPOSITS AND CONTAMINANTS  
THAT ROB YOUR ENGINE OF  
POWER AND EFFICIENCY.  
MOTOR MEDIC MOTOR FLUSH  
RESTORES YOUR VEHICLE'S LOST  
PERFORMANCE AND EXTENDS  
YOUR ENGINE'S LIFE. USE IT  
BEFORE EVERY OIL CHANGE.

MOTORMEDIC.COM



## Esquire

S H I R T S   &   T I E S

## THE ULTIMATE MEN'S SHIRT & TIE COLLECTION

The workplace bridged the gap between dressed and casual—isn't it time you did the same? Shop the ultimate shirt and tie collection curated by Esquire—closer fits, performance fabrics, and reliable patterns and colors that are as appropriate in the office as they are dependable for going out after work.

**FEATURED:** Green Check Slim Fit Dress Shirt \$89.50;  
Green Floral Narrow Tie, \$59.50

AVAILABLE AT  
**MEN'S WEARHOUSE®**

# Prepare to get Demonized!

## Congratulations on the purchase of your new Dodge Demon. By now you've probably signed the Customer Acknowledgment Form, also known as the Demon Waiver. So you already know that the tires shatter on cloudy days and if you

ordered it with one seat, you shouldn't install a papasan chair to fill out the interior. We're sure that you're excited to run some nine-second quarters, Broseph or Brosephine, but there are just a few more items we need to address before you head out to the strip to sneer down on the pathetic weaklings who bought Hellcats.

First of all, your extra Demon Gear will be sent separately in a Demon Crate. For Demon Legal Reasons, we can't deliver this to your house, so it'll be sent to a remote mountain-top in Chile. Should you successfully repatriate your Demon Crate, congratulations! That one is filled with rocks, but it contains clues that will lead you to the real one. Which is buried in your backyard. We did that while you were in Chile. We on the Demon Team love clues and hints and whatnot. Just look at how we introduced the car, which was like *The Da Vinci Code* for people whose bloodstreams contain detectable levels of traction compound.

When that crowd found out that the Demon came with 315-section-width tires at all four corners, some thought it was a road-course car, like the Camaro Z/28. Ha! We'll have you know that turning voids the warranty. After a run down the strip, you get your Demon back to the Christmas

tree by driving completely around Earth. On a related note, your Demon Crate comes with a pair of skinny little wheels for drag racing. And—we can't stress this enough—they go on the front.



Did you order a Demon with only one seat? We didn't really think anyone would take us up on that, you socio-path. But we guess we'll build one that way. It'll be called the Neighbors Say He Kept to Himself package. Is there anything else we can remove but still charge you for? How

about the steering wheel? For a dollar, we'll replace it with a pair of ropes attached to the tie rods. Demons ain't about steering, nohow. That's the Demon motto. It's on the T-shirt that comes in your Demon Crate.

Let's talk power. The Demon makes 808 horsepower on pump gas, but that's just the start. To reach its full rating of 840 horses, you'll need to visit the chemical supply store and get some pretty hopped-up stuff. Some of it's gonna raise flags with the ATF, but do you want to run nines or not? So what you do is put on your gas mask and pour this stuff in the tank—carefully, carefully—then back away until you can barely see the car. Use the remote starter. When you fire it up, don't be alarmed at the noise, which will sound like the attack on Fort Sumter. That's just the combustion cham-

bers filling with plasma and Higgs bosons. It's totally normal.

And guess what? Now you're ready to pull sick wheelies. We're supposed to say you should wheelie only at the drag strip—wink, wink—but think about how righteous it'd be to wheelie away from a toll booth or a PTA meeting or the Taco Bell drive-through. If you're having trouble getting your Demon to wheelie, you're probably just a bad driver because we all did it here, no problem.

Despite the unprecedented level of awesomeness that you've purchased, we must warn you that you're gonna get beat. That's just the way it is with drag racing. If you have a Viper ACR, there's very little chance that someone's going to show up at Virginia International Raceway and beat you with a Pinto. But that kind of thing happens at drag strips all the time. Your Demon will be beaten by tubbed Chevettes and diesel pickups and probably Teslas, assuming Teslas actually exist (many regard them as mythological). Success will depend on luck, your launch technique, and the depth of VHT on your local eighth-mile.

Speaking of drag strips, you'll recall that the NHRA banned the Demon. Okay, it didn't ban the car. It didn't even lightly chastise it. It just said the Demon needs a roll cage if it runs the quarter in less than 10 seconds. So what'll happen is, after 500 practice runs, you break 10 seconds. Then the guy in that little booth who hands you your time slip (he doesn't actually live there, but in the woods nearby) will say: "Hey, you ran a nine! Per NHRA General Regulations, section 20, page 25, 'full-bodied cars running between 8.50 and 9.99 and slower than 180 mph must meet the NHRA full-bodied roll-cage requirements,' preferably using 4130 chromoly tubing welded with an approved TIG process." Just kidding. What he'll actually say is, "Were you the red car?" before going back to eating printer paper.

And you'll slowly wheelie away from him, your exhaust fumes melting the windshield of the car behind you, knowing that you've got a car that's good at everything, with the exception of most things. As for that Chevette, you'll get him next time. 🇺🇸

# Ezra Dyer



# Do you hate your detector?

**It was your best friend, now it never shuts up.**

**The good news:** New cars have a safety feature, the blind-spot warning system. Many models use K-band radar to "see" nearby cars.

**The bad news:** Onboard radar turns each of these "seeing" cars into mobile K-band false alarms. A blind-spot system may tag along with you for miles. You're stuck, not knowing which car to maneuver away from. GPS is no solution. It doesn't work on mobile fakes.



**V1 wins war against false alarms:** New computer code weeds out phony K-band alerts.

## Why you will love V1

**Problem solved:** V1 has an algorithm that recognizes these mobile false alarms and excludes them, yet never blocks a real threat. We've named it **Junk-K Fighter**. And it's now built into all new V1s.

**Detectors that don't detect:** It's easy to make a detector without false alarms. Just give up on long-range warnings. Our competitors play that game, we don't.

### First obligation of V1:

V1 will never miss a threat. Quiet is nice, but missing an ambush is fatal. That's why we don't use GPS. GPS knows only location, and if the frequency range of a new threat is the same as that of a blocked alarm, sorry, but GPS programming demands silence at that location, even if it's a trap. V1 will never fail you that way.

**Satisfaction guaranteed:** Try it for 30 days. If it doesn't satisfy for any reason, send it back for a full refund.

**Call toll-free 1-800-331-3030**

- ☐ Valentine One Radar Locator with Laser Detection - \$399
- ☐ Carrying Case - \$29    ☐ Concealed Display - \$39
- ☐ SAVVY® - \$69    ☐ V1connection™ - \$49    ☐ V1connection™ LE - \$49

Plus Shipping / Ohio residents add sales tax

**30-Day Money-Back Guarantee**

Valentine One is a registered trademark of Valentine Research, Inc.

[www.valentine1.com](http://www.valentine1.com)

**valentine One®**  
RADAR LOCATOR

Valentine Research, Inc. Ph 513-984-8900  
Department No. YB107 Fx 513-984-8976  
10280 Alliance Road  
Cincinnati, Ohio 45242





# WeatherTech®

**Accessories Available for**

Acura · Audi · BMW · Buick · Cadillac · Chevrolet · Chrysler · Dodge · Ferrari · Ford · GMC · Honda · Hummer · Hyundai · Infiniti  
Isuzu · Jeep · Kia · Land Rover · Lexus · Lincoln · Maserati · Mazda · Mercedes-Benz · Mercury · Mini · Mitsubishi · Nissan  
Oldsmobile · Plymouth · Pontiac · Porsche · Saab · Saturn · Scion · Subaru · Suzuki · Toyota · Volkswagen · Volvo





**WE BUILD, BUY AND HIRE AMERICAN  
WE'RE DOING OUR PART**

**Order Now: 800-441-6287**



American Customers  
[WeatherTech.com](http://WeatherTech.com)



Canadian Customers  
[WeatherTech.ca](http://WeatherTech.ca)



European Customers  
[WeatherTech.eu](http://WeatherTech.eu)

© 2017 by MacNeil IP LLC



## Laser Measured FloorLiner™



- Accurately and completely lines the interior carpet
- Material provides soft touch top, rigid core strength and bottom surface friction

*Available in Black, Tan and Grey  
(Cocoa Available for Select Applications)*



## All-Weather Floor Mats

- Deeply sculpted channels designed to trap water, road salt, mud and sand
- Will not curl, crack or harden regardless of temperature

*Available in Black, Tan and Grey  
(Cocoa Available for Select Applications)*

### Accessories Available for

Acura · Audi · BMW · Buick · Cadillac · Chevrolet · Chrysler · Dodge · Ferrari · Ford · GMC · Honda · Hummer · Hyundai · Infiniti · Isuzu · Jeep · Kia · Land Rover · Lexus · Lincoln · Maserati · Mazda · Mercedes-Benz · Mercury · Mini · Mitsubishi · Nissan · Oldsmobile · Plymouth · Pontiac · Porsche · Saab · Saturn · Scion · Subaru · Suzuki · Toyota · Volkswagen · Volvo · and more!

**Order Now: 800-441-6287**



American Customers  
[WeatherTech.com](http://WeatherTech.com)



Canadian Customers  
[WeatherTech.ca](http://WeatherTech.ca)



European Customers  
[WeatherTech.eu](http://WeatherTech.eu)

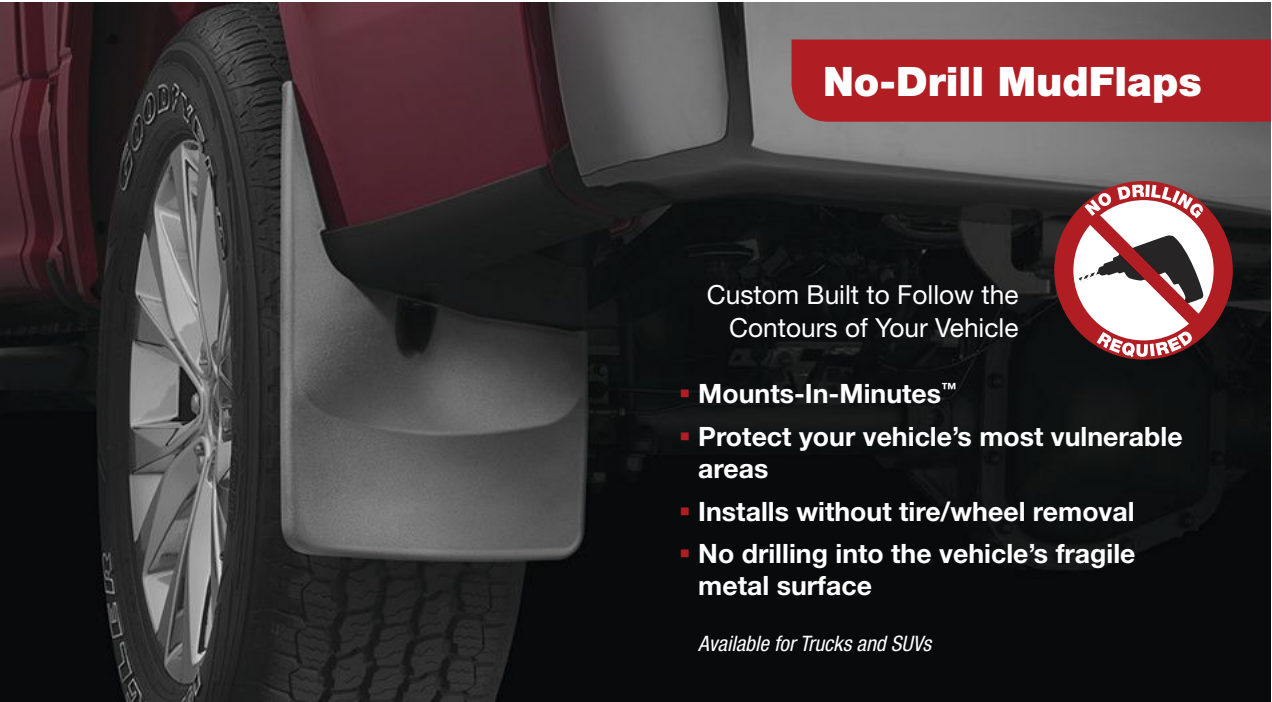




## Cargo/Trunk Liner

Available in Black, Tan and Grey  
(Cocoa Available for Select Applications)

- Complete trunk and cargo area protection
- Digitally designed for each application
- Remains flexible under temperature extremes



## No-Drill MudFlaps

Custom Built to Follow the  
Contours of Your Vehicle



- Mounts-In-Minutes™
- Protect your vehicle's most vulnerable areas
- Installs without tire/wheel removal
- No drilling into the vehicle's fragile metal surface

Available for Trucks and SUVs



**WeatherTech®**  
American Manufacturing Done Right™

## Side Window Deflectors

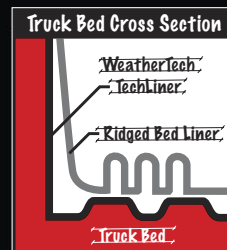
Designed and Engineered in USA -  
Handcrafted in Germany

- Sleek, low profile design
- Reduces wind noise and allows interior heat to escape

## TechLiner®

- Flexible and durable
- No messy sprays or drilling needed
- 100% recyclable and odorless material
- Chemical and UV resistant

*TechLiner® also works well under rigid bed liners to protect against paint wear*



### Accessories Available for

Acura · Audi · BMW · Buick · Cadillac · Chevrolet · Chrysler · Dodge · Ferrari · Ford · GMC · Honda · Hummer · Hyundai · Infiniti · Isuzu · Jeep · Kia · Land Rover · Lexus · Lincoln · Maserati · Mazda · Mercedes-Benz · Mercury · Mini · Mitsubishi · Nissan · Oldsmobile · Plymouth · Pontiac · Porsche · Saab · Saturn · Scion · Subaru · Suzuki · Toyota · Volkswagen · Volvo · and more!

**Order Now: 800-441-6287**



American Customers  
[WeatherTech.com](http://WeatherTech.com)



Canadian Customers  
[WeatherTech.ca](http://WeatherTech.ca)



European Customers  
[WeatherTech.eu](http://WeatherTech.eu)





## CargoTech®

### Cargo Containment System

- Super grippy underside helps keep cargo in place
- Works with WeatherTech® AVM® Cargo Mat, Cargo Liner or existing vehicle carpet or flooring



## BumpStep®XL

WeatherTech®

24" Hitch Mounted  
Bumper Protection



**WeatherTech®**  
American Manufacturing Done Right™



**LONG  
LIVE  
PERFORMANCE**

When you create a New Sportscar eXperience, you don't chase the competition—you chase your dreams. You build a facility that manufactures one thing: performance. You assemble the world's best designers and engineers. You throw in a couple of troublemakers. And you get to work. You start with the driver. You reject benchmarks. You stay true to the feeling. You do it your way. You deliver PRECISION CRAFTED PERFORMANCE. You don't just tell the world what you've created. You find a racetrack. And you show them.

Build your NSX at [nsx.acura.com/build](https://nsx.acura.com/build)





// VIRGINIA  
INTERNATIONAL  
RACEWAY  
// GRAND WEST  
COURSE  
// 4.1 MILES

No.

// 19 ENTRIES IN  
5 CLASSES

# LIGHTNING LAP

**We never meant it literally.** When we named our annual performance-car torture test Lightning Lap more than a decade ago, we meant it in a figurative sense. Fast like lightning, get it? That Lightning Lap is also alliterative is a source of amusement and at least a bit of embarrassment. This year, though, the 11th time we've visited America's most demanding road course, Virginia International Raceway, we were in some danger of actually being hit by lightning of the 1 billion-volts variety, which is not at all amusing. Still, tires needed to be destroyed. Nerves needed singeing. We would not be swayed from our course. At least not until after the track dried.

////////// BY K.C. COLWELL, JOSH JACQUOT, TONY QUIROGA, AARON ROBINSON, AND ERIC TINGWALL









For a few days every year, *Car and Driver* turns the best American road course into our southern White House. We drive from Ann Arbor, Michigan, to Alton, Virginia, in a platoon of editors, photographers, videographers, and assistants and set up shop at Virginia International Raceway (VIR). We spend the prior four months procuring the hottest new cars and making sure we have all the timing gear, helmets, water, food, and adult beverages we could possibly need. We then give ourselves three days to distill every car on hand into a single number: a lap time of VIR's 4.1-mile Grand West Course.

To lap VIR quickly, a car must be able to expertly navigate every kind of corner imaginable. Fast sweepers and tight hairpins, inclines and declines, and one terrifying off-camber and downhill left (Turn 10). This is our benchmark test of what a car can really accomplish, because as much as zero-to-60-mph times, braking distances, and maximum lateral acceleration can tell you about a car, a great racetrack shows you how all those things come together. You will not find a more challenging track





of this length in the U.S., which is why we selected VIR in the first place. It's hard on brakes and tires and is exhausting for drivers. VIR is such a good test of a vehicle's ability that General Motors, Ford, and Fiat Chrysler's SRT team rent it to develop their newest and most incendiary machinery.

For 10 years, we dodged inclement weather, mostly. But this time, for Lightning Lap No. 11, the heavens would dump their ballast on VIR for two and a half of the three days we had booked. All the planning in the world can't account for Mother Nature. The ebb and flow of cold and warm fronts are predicted weekly. But storm forecasts six months to a year out, which is how far in advance we have to book the track, are limited to the *Old Farmer's Almanac*.

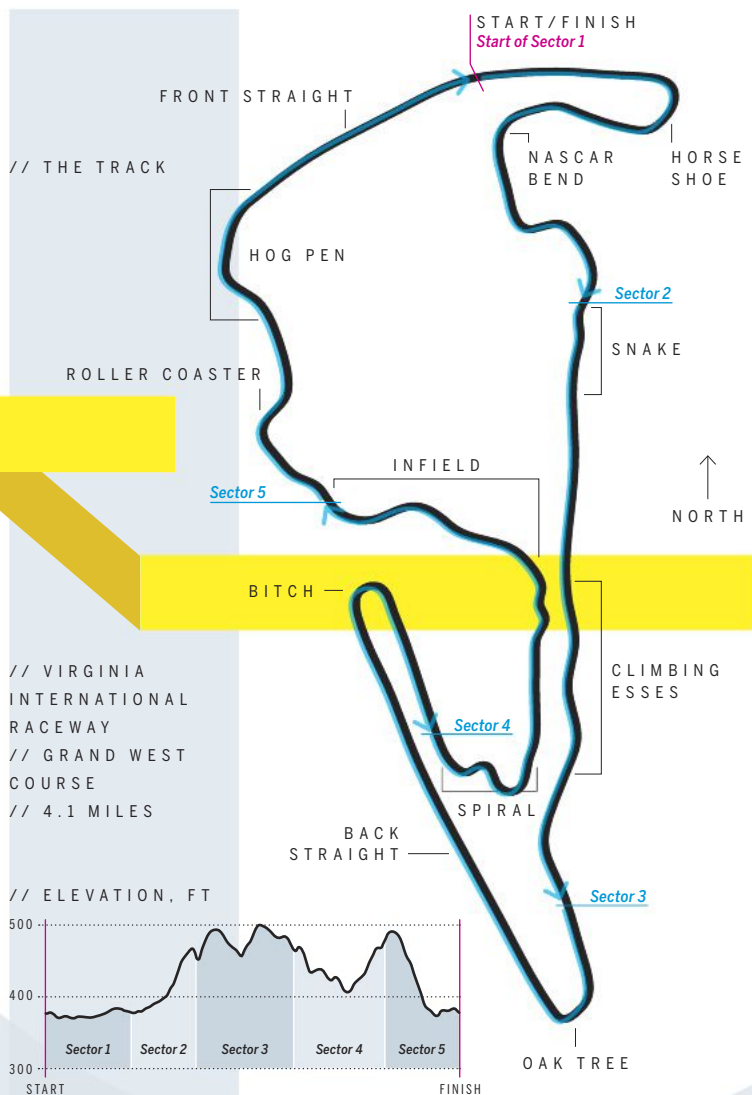
Here's a demoralizing scene: A group of crestfallen enthusiasts sitting in a rented paddock with 19 of the best new performance cars tucked away in garages, silent. You could practically hear the money spent on track rental washing down the storm drains. We tested the waters on Grand West, so to speak, in the wonderful new Honda Civic Si, the updated Subaru WRX fitted with the Performance package, and even Porsche's four-cylinder 718 Cayman S. But dedicated track monsters such as the Mercedes-AMG GT R, the Chevrolet Camaro ZL1 1LE, the Nissan GT-R Track Edition, and the gorgeous Alfa Romeo Giulia Quadrifoglio sat still. As soon as a dry line would begin to form, it started raining again. The best week ever had turned into the worst.

This downtime did allow us to ponder why two of the most anticipated new cars weren't present: the Ford GT and the Lamborghini Huracán Performante. Lambo had a decent excuse, as it was launching the car in Europe and had no examples in the States. Ford, on the other hand, offered no justification. Sitting around thinking about it while the rain fell only made us angrier; then sadder, because we still couldn't lap anything; then even angrier over the weather. It's a vicious cycle. We might get the GT at VIR one day, we might not.

Luckily, the track had a cancellation and the following week opened up, just as the skies had done before. So we packed up, left, regrouped, and returned 72 hours later.

As in years past, we grouped cars by price (sub-\$35,000 LL1 through \$125,000-to-\$249,999 LL4—no \$250K-plus LL5 cars showed up). Base prices include performance-enhancing options such as brake, tire, and chassis upgrades because we believe that a \$30,000 car with \$10K in options that make it go faster should be compared with other \$40,000 cars. We also invited four large sedans to lap, but one, the Mercedes-AMG S63, wasn't available, so our LLTransporter class rendered three: Audi S8 Plus, BMW Alpina B7, and BMW M760i. They weren't as slow or out of place on a track as you might think.

Equipped with Racelogic GPS-based data loggers on the dashes, helmets on heads, and GoPros stuck to the cars, our five editors attacked VIR on Monday the way we'd planned to the week before. Finally, the weather was good. The cars were better.



// ELEVATION, FT



CLASS BOUNDARIES:  
 // **LL1**  
 UP TO  
 \$34,999  
 // **LL2**  
 \$35,000 –  
 \$64,999  
 // **LL3**  
 \$65,000 –  
 \$124,999  
 // **LL4**  
 \$125,000 –  
 \$249,999  
 // **LL5**  
 \$250,000  
 AND ABOVE

# 3:19.7

**LL1** 2017 Subaru BRZ Performance Package  
 Base Price: \$29,660 • **As-Tested Price: \$29,660**  
 205 hp • 2822 lb • 13.8 lb/hp  
 Tires: Michelin Primacy HP  
 215/45R-17 87W

If there were an award for the most manic engine among this year's Lightning Lap contenders, it would, ironically, go to the slowest car—Subaru's BRZ with the Performance package. Its flat-four screams a 7400-rpm riot, gear after gear, ultimately whipping itself into a frenzy that makes more noise than motion. Though Subaru hasn't given the BRZ the much-needed power boost it deserves, it did fix the one glaring fault the car exhibited in its first Lightning Lap appearance in 2013—inadequate brakes.

Now armed with no-surrender Brembos, Sachs dampers, wider wheels, and five more horsepower, the 2017 BRZ was primed to be ever-so-slightly



quicker than the 2013 model, which laid down a 3:18.6 lap four years ago. But then, as noted, it rained for two and a half days. And even after the course “dried” at the end of the first week, there were two unavoidable rivers of water running across the track at Spiral on Monday. They conspired to add 1.2 seconds to the BRZ’s time at the next set of corners, a deficit from which it could not recover.

Aside from the capable brakes, the BRZ’s other changes are so subtle that they go largely unnoticed. So the BRZ remains the Janus-faced sports car it has always been. And we love/hate it accordingly. We love its light weight, accurate steering, sharp shifter, and textbook rear-drive handling. But we can’t think of another sports car more in need of additional power and grip. It is, at heart, a momentum car, and one small mistake will ravage your would-be best lap. But perfecting the details in a car that’s as benign, predictable, and rewarding as this one is more fulfilling than it should be in a machine this modest. Especially now that it has the brakes to handle it.

# 3:16.9

**2017 Fiat 124 Spider Abarth**

**Base Price: \$30,685 • As-Tested Price: \$30,685**

**164 hp • 2468 lb • 15.0 lb/hp**

**Tires: Bridgestone Potenza RE050A 205/45R-17 84W**

So here’s the obvious question: How does the Fiat 124 Spider Abarth, a car that accelerates more slowly from a stop, makes less grip, and generally exhibits less desirable handling than the Mazda MX-5 Miata on which it’s based, end up posting a lap time of 3:16.9, nearly four seconds quicker than the Miata we ran here in 2015? In large part, it’s because of power and power delivery. Take the front straight, for example. Both cars pass through Hog Pen at similar minimum speeds, the Fiat holding a slight 1.1-mph advantage.

HOG PEN



**MINIMUM SPEED THROUGH THE OFF-CAMBER, BLIND, AND DOWNHILL TURN 10. IT'S A LITTLE TRICKY:**

|                            |          |
|----------------------------|----------|
| Nissan GT-R Track .....    | 91.5 mph |
| Chevy Camaro ZL11LE .....  | 90.7     |
| Mercedes-AMG GT R .....    | 90.7     |
| Porsche 911 Turbo S .....  | 89.6     |
| BMW M240i .....            | 87.0     |
| Porsche Panamera Turbo ... | 86.4     |
| Mercedes-AMG E63 S .....   | 85.8     |
| Lexus LC500 .....          | 85.7     |
| Chevy Camaro ZL1 .....     | 84.9     |
| Alfa Giulia Quad .....     | 84.0     |
| Mini Clubman JCW .....     | 83.6     |
| Honda Civic Si .....       | 83.3     |
| Fiat 124 Spider .....      | 82.2     |
| BMW Alpina B7 .....        | 81.8     |
| Porsche 718 Cayman S ..... | 81.7     |
| Subaru WRX .....           | 81.6     |
| Subaru BRZ .....           | 79.0     |
| Audi S8 Plus .....         | 76.3     |
| BMW M760i .....            | 73.5     |

By the end of the straight, however, that advantage grows to more than 10 mph (120.6 mph versus 110.2). This is the most glaring instance of a pattern that repeats itself again and again on the track.

There’s technique to making the Fiat quick. Its turbocharged 1.4-liter inline-four doesn’t like to rev, but offers respectable mid-range snort, allowing us to avoid shifting in places where a car with less torque (it has a 36 pound-feet advantage over the MX-5) might need to go down a gear. Short-shifting at 6000 rpm keeps it on the boil, too. But mostly, the Spider simply requires commitment—a good old-fashioned belief that a 70-mph slide in a low-powered, lightweight car is recoverable and, in fact, improves lap times. The Spider keeps its end of the deal. It has less body roll than the Miata, which gives it more confidence in these situations. Exiting the infield, it carries big slides between the esses, scrubbing speed and allowing us to stay committed to the throttle and maintain boost, which is faster than lifting. So it may not be friendlier than the Miata, but it sure is quicker.

# 3:16.0

**LL2** 2017 Mini Clubman

John Cooper Works ALL4

Base Price: \$36,450 • **As-Tested Price: \$45,000**

228 hp • 3518 lb • 15.4 lb/hp

Tires: Bridgestone Potenza S001 RFT

225/40R-18 92Y

This year, the slowest rear-drive cars at this event require a special touch to produce that perfect lap—a combination of carefully managed oversteer and a mulish commitment to the right pedal. The Clubman JCW ALL4 isn't one of those cars. Yes, it certainly needs to carry speed like the rest of the low-powered entrants, but doing so in the Mini is an exercise in restraint; namely, restraining understeer. Don't plan on throwing it into any corners tail first, because even with all-wheel drive, the Clubman isn't a dirty dancer. It won't twerk entering Hog Pen. It won't make you fear for your life through the Climbing Esses. It wouldn't even slip us a hint of powerslide through the water crossing in Spiral. So stable is the Mini that its entry speed into Hog Pen is 2.6 mph faster than the WRX's—a car that laps VIR 4.5 seconds quicker. Stability is the name of this Mini's game, and preserving its tires—especially its front tires—is crucial to getting the most out of it.

That the Clubman is only 0.6 second behind the quickest-lapping Mini we've ever run at Lightning Lap (a 2015 Cooper Hardtop JCW) speaks to the ability of this larger, heavier all-wheel-driver. Four-piston front Brembos give the Mini better braking performance than most of the cars running similar times, a significant accomplishment given the Clubman's 3518-pound curb weight. Don't think that heft means this Clubman isn't a Mini. It is. The immediate turn-in, weighty steering, and growling intake note are all there. And so is the attitude, tempered as it may be by understeer.



**HOG PEN OFTEN GETS MESSY.**

**EXIT SPEEDS ARE AS FOLLOWS:**

|                            |           |
|----------------------------|-----------|
| Mercedes-AMG GTR ...       | 112.0 mph |
| Chevy Camaro ZL1 1LE ..... | 111.3     |
| Porsche 911 Turbo S .....  | 111.1     |
| Chevy Camaro ZL1 .....     | 109.9     |
| Mercedes-AMG E63 S .....   | 106.5     |
| Nissan GT-R Track .....    | 105.3     |
| Alfa Giulia Quad .....     | 101.6     |
| Porsche 718 Cayman S ..... | 101.0     |
| Audi S8 Plus .....         | 100.9     |
| BMW Alpina B7 .....        | 100.2     |
| Porsche Panamera Turbo ... | 98.4      |
| Lexus LC500 .....          | 97.5      |
| BMW M240i .....            | 97.1      |
| BMW M760i .....            | 96.5      |
| Subaru WRX .....           | 90.1      |
| Fiat 124 Spider .....      | 88.4      |
| Mini Clubman JCW .....     | 87.3      |
| Subaru BRZ .....           | 87.3      |
| Honda Civic Si .....       | 84.7      |

# 3:14.6

**LL1** 2017 Honda Civic Si

Base Price: \$24,975

**As-Tested Price: \$24,975**

205 hp • 2884 lb • 14.1 lb/hp

Tires: Goodyear Eagle F1

Asymmetric 2

235/40R-18 95Y

There's a lot of tire under the Civic Si's alien-colored skin. Goodyear Eagle F1 Asymmetric 2s sized 235/40R-18 sit at every corner and provide more grip than a 2884-pound car with 205 horsepower probably needs. But that grip, along with a firm chassis with unflappable stability, had us crooning like Waylon Jennings while straightening the curves and flattening the hills.

Right after a shift into fifth, the Si arrived at the mouth of the uphill esses at 106.9 mph. Unlike most cars, the Si accelerates up the hill. Keep the right pedal pinned and aim. The left-right-left-right combo that's usually a sphincter-cincher is something you could probably do with one hand on the wheel. At the top, the Si hit 110.4 mph, which is 12.5 mph faster than an equally powerful BRZ and only 4.0 mph off the 580-hp 911 Turbo S.

Once hot, the Goodyears get greasy enough to trigger the stability control, which can be relaxed but not fully disarmed. The computer attempts to revector the understeering front end by clamping the inside brake calipers, slowing the car. On cooler rubber, there's no obvious interference.

Our heads swollen with grip, we tried slinging the Si into the downhill right of Hog Pen at Camaro ZL1 1LE speed—actually the Si's entry at 89.2 mph was higher than the 1LE's. The Si couldn't handle all that speed, though, and exited the corner at a low 84.7 mph. The fact that we felt like it might have been able to, and that it came out the other side on the track and not on the grass, goes to show that the Si makes a treacherous track seem easy.

# 3:11.5

**LL1** 2018 Subaru WRX Performance Package

Base Price: \$32,205 • **As-Tested Price: \$32,205**

268 hp • 3336 lb • 12.4 lb/hp

Tires: Dunlop Sport Maxx RT

245/40R-18 97W

Three years ago, we found ourselves in the dirt, literally, as the WRX's brake pads expired exiting Hog Pen. Subaru addressed that shortcoming this year by adding high-temperature pads to the WRX with the new Performance package, which helped shave four





seconds off the earlier car's lap time—in a WRX that's 74 pounds heavier.

Though it doesn't hold the top spot on Subaru's performance-car roster, the WRX is an underrated machine. It's capable, precise, and rewarding to drive on a racetrack, and has come a long way since the days of the first-generation Impreza platform. The strength of those early cars lay primarily in their long-travel suspensions, tall tires, and loose demeanor. They were ideally suited to rough roads. The current WRX, though, is most at home on smooth pavement, such as VIR's.

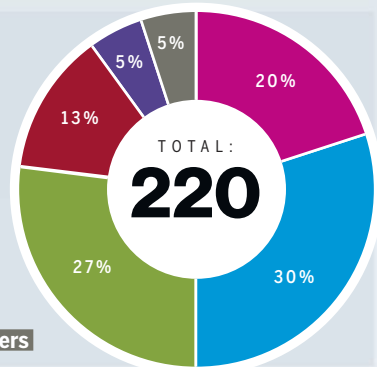
The WRX demonstrates such confidence-inspiring turn-in and transitional responses that it entered Spiral 5.6 mph faster than the Porsche 718 Cayman S and 4.2 mph faster than the BMW M240i. And with a best lap time of 3:11.5, the WRX was more than three seconds ahead of its nearest LL1-class competitor, the Honda Civic Si. It was also virtually unaffected by the water that so profoundly flummoxed the BRZ.

Inverted front struts (on Limited and Premium models) and brake-based torque vectoring on the front axle help turn the WRX into a highly proficient road-course car. And proper brake pads don't hurt, either. In fact, since it now trails the 2015 WRX STI by only one second around VIR, it might just be the WRX to have.

## CLASS ACTION

We now have 220 laps on record. Nearly half of them, 109, were in LL1 and LL2 cars. One percenters' cars (LL5) and oddballs, such as those in this year's LLTransporter class, each make up about 5 percent of the total.

LL1 • LL2 • LL3 • LL4 • LL5 • Others





# 3:08.0

**112** 2017 BMW M240i

Base Price: \$47,945 • **As-Tested Price: \$57,631**

335 hp • 3507 lb • 10.5 lb/hp

Tires: Michelin Pilot Super Sport

F: 225/40ZR-18 88Y R: 245/35ZR-18 92Y

This car tells the story of weight bloat in the auto industry. C'mon, man: 3507 pounds for this two-door coupe? For the “little” BMW? If you're wondering why a 335-hp turbo inline-six can't get the car past 135 mph on the front straight or deliver anything better than an okay 3:08 lap time, look no further than the avoirdupois. Still, what this car does with its mass is pretty entertaining. The quick, direct steering actually makes it feel light on its feet, and the tires and brakes will accept multiple hard laps without dribbling away performance. The behavior is predictable and benign, the rear-end stepping out—and back in—in exact accordance with your throttle input.

As a track-teaching tool, this and a Mazda Miata probably rate at the top; you can learn everything you need to know about fast driving in this car, even if, at 0.94 g in Turn 1 and a humble 113.4-mph average up the esses, you're not actually going that fast. Manual transmissions are becoming such an outlier in sporty cars that our pilots coming down from the faster machines had to adjust to taking a hand off the wheel. Suddenly you're reminded of everything that used to be hard about track driving, from executing a clean heel-and-toe jitterbug to avoiding fifth-to-second miss-shifts to figuring out how to left-foot brake when your left foot is suddenly needed for the clutch pedal. It may be a couple of hundred pounds heavier than it should be, but the M240i takes you back for a refresher in a way that makes classwork a delight.

## New Class: LLTransporter



**3:07.6**

**2017 BMW M760i xDrive**

Base Price: \$156,495 • **As-Tested Price: \$171,895**

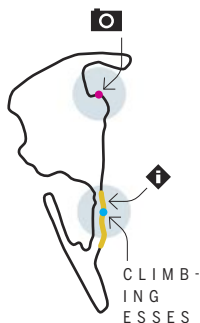
601 hp • 5058 lb • 8.4 lb/hp

Tires: Michelin Pilot Super Sport

F: 245/40ZR-20 (99Y) R: 275/35ZR-20 (102Y)

Despite riding on air springs, adaptive dampers, and electronically adjustable anti-roll bars, the M760i doesn't offer a single driving mode that can rein in the abundant squish in its suspension. This is Veuve Clicquot ride quality, wafy enough that drinking from a champagne flute in a moving car seems like a perfectly reasonable proposition. But VIR's turns aren't the graceful sweepers of Germany's autobahns, and we're not paid chauffeurs.

Driven without regard for the tycoon in the rear, the M760i is softly sprung, underdamped, and prone to large roll heaves. Venture too far up the curbing as you blaze the Climbing Esses at an average speed of 111.9 mph, and you'll be halfway to Oak Tree before the body settles again. Pinkie-finger-light steering adds to the sense of uncertainty.







If the M760i's chassis is reluctant, though, its twin-turbo 6.6-liter V-12 is plenty eager. A potent 601-horsepower propelled this 7-series to a 150.5-mph peak speed—faster than the Nissan GT-R Track Edition, despite that car's sizable weight-to-power advantage. And while the M760i lords only a single horsepower over the Alpina B7, sonically speaking, the 12-cylinder is a Grand Canyon full of McIntosh tube amps compared with the compressed MP3 of the twin-turbo V-8 in the Alpina.

The M760i should have run faster, but the 5058-pound sedan balked at the prospect of hustling any harder. Early in our lapping, the V-12 stumbled in the upper reaches of the tachometer, lapsed into a low-power limp mode, and showed a check-engine light accompanied by low-fuel-pressure codes. Clearing the codes returned the engine to its glory, but that fix rarely lasted long enough to complete a lap with full power. In our fastest run, the engine started loafing 900 feet before the finish line. Explain to us again how the BMW M badge, even the diluted M Performance one, got within 20 feet of this thing.

### 3:04.3

#### 2017 BMW Alpina B7 xDrive

Base Price: \$137,995 • **As-Tested Price: \$152,545**

600 hp • 4901 lb • 8.2 lb/hp

Tires: Michelin Pilot Super Sport

F: 255/40ZR-20 (101Y) R: 295/35ZR-20 (105Y)

The BMW M760i suggests that a 17-foot-long, two-and-a-half-ton sedan designed around the rear seat has no business lapping a track. The Alpina B7, in turn, proves that the M760i has no business wearing an M badge.

With the B7, the 55-year-old tuning house in Buchloe, Germany, demonstrates a better understanding of the M's mission brief than BMW's own engineers. Alpina's massaging of the 7-series chassis is what transforms it from luxury sedan to sports sedan. The B7 responds faithfully to quick jukes and high g's, happily playing along with the Lightning Lap conceit. The steering wheel turns with confident heft. The suspension tamps out excessive roll. Wider Michelin tires elevate lateral grip, with the B7 recording 0.97 g in Turn 1, compared with the M760i's 0.93 g. Scanning the laps side by side, it becomes clear that the B7 doesn't earn its lead over the M760i in any one spot. It simply covers most sections of the track at a faster pace.

The Alpina's twin-turbo V-8 doesn't have the same presence as the M760i's honeyed 12-cylinder, but it is

the key factor in the B7's 157-pound advantage and \$18,500 discount compared with the M760i. Oddly, the B7's eight-cylinder suffered a similar affliction as the M760i's V-12, stumbling at high rpm, cutting power, and leaving us frustrated by our relatively small set of uninterrupted fast laps. But in the B7, the car's sure-footed handling made it easier to get up to speed quickly, meaning the lap time you see here reflects an honest assessment of its abilities.

### 3:03.6

#### 2017 Audi S8 Plus

Base Price: \$127,850 • **As-Tested Price: \$148,000**

605 hp • 4634 lb • 7.7 lb/hp

Tires: Dunlop SP Sport Maxx GT

275/35ZR-21 (103Y)

Of all the dynamic secrets Lightning Lap reveals, this one ranks as the year's most unexpected: The Audi S8 Plus, despite wearing equal-width front and rear tires and carrying 56.5 percent of its 4634 pounds on the front axle, is not a stubborn understeering mule. In lapping VIR with such improbable agility and excitability, the S8 challenged our fundamental understanding of the world we live in. If the largest Audi car pivots rather than plows, how can we be sure that the Florida Man of all those idiot-crime headlines isn't actually a Rhodes scholar?

The S8 doesn't just turn in eagerly, it rotates about its center when trail-braked into a corner, evincing a neutrality uncommon in cars with four doors. Carbon-ceramic brakes, part of an \$11,000 Dynamic package, keep fade at bay better than the iron discs used on its LLTransporter competitors, even if the S8's pedal travel still lengthens with heat.

In slower corners, the driver plays an active role in ensuring that the tail follows the nose. Our impressions of the Audi were no doubt colored by the 7-series duo, both of which drove with an imperturbable stability. It helps that the S8 is built around the shorter of two wheelbases Audi has for its flagship: All current 7-series sold in America separate front and rear axles with an additional 8.6 inches versus this S8. The Audi's Dunlops are also more sensitive to heat than either BMW'sMichelins, slipping more readily with each successive rubber-cooking turn. That last part doesn't necessarily help the S8's lap time, but it sure makes it more fun to drive.

**❖ FOUR CORNERS  
LINKED BY  
THEIR DEMAND FOR  
HIGH SPEED, THE  
CLIMBING ESSES ARE  
FRIGHTENING AND  
REWARDING. AVERAGE  
SPEEDS THROUGH  
THERE THIS YEAR:**

|                             |           |
|-----------------------------|-----------|
| Chevy Camaro ZL11LE ...     | 126.2 mph |
| Mercedes-AMG GT R .....     | 124.9     |
| Chevy Camaro ZL1 .....      | 122.4     |
| Porsche 911 Turbo S .....   | 121.7     |
| Nissan GT-R Track .....     | 118.1     |
| Porsche Panamera Turbo .... | 117.6     |
| Mercedes-AMG E63 S .....    | 117.1     |
| Porsche 718 Cayman S .....  | 116.3     |
| Alfa Giulia Quad .....      | 114.6     |
| Audi S8 Plus .....          | 114.4     |
| BMW M240i .....             | 113.4     |
| BMW M760i .....             | 111.9     |
| Subaru WRX .....            | 111.5     |
| Lexus LC500 .....           | 111.3     |
| BMW Alpina B7 .....         | 110.9     |
| Honda Civic Si .....        | 110.8     |
| Mini Clubman JCW .....      | 109.6     |
| Fiat 124 Spider .....       | 107.2     |
| Subaru BRZ .....            | 106.5     |





# 3:04.8

**LL3** 2018 Lexus LC500

Base Price: \$102,975

**As-Tested Price: \$105,345**

471 hp • 4394 lb • 9.3 lb/hp

Tires: Michelin Pilot Super Sport ZP

F: 245/40RF-21 96Y

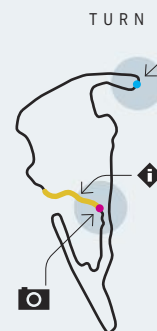
R: 275/35RF-21 99Y

Those of you wondering if the empire of Toyota would ever produce another pretty car have at last been given hope. The LC500 may not please all eyes from every angle, and for some it may look like a racing amoeba. But its alluringly low hoodline and muscular stance mean your head, like that of an owl following a 4394-pound mouse, tends to swivel when this trinket of post-postmodernism scurries past.

Lexus has learned a few things about how to make a driver's car, this one's prodigious curb weight notwithstanding. First, the LC sounds the business, the 471-hp V-8 making a sumptuous bawl as the car strains for lap times. Second, the reassuring steering, fast-acting transmission, and stout brakes were as much on point as the supplied Bridgestone Potenza 5001 RFTs would allow before they got greasy with heat.

Still, we struggled to get the car turned as sharply as we would have liked to while keeping the rear end in line, leading to lap times close to 3:07. It wasn't until the final day that we noticed that the spare set of tires Lexus had shipped with the car were not in fact more Bridgestones but the other factory fitment: Michelin Pilot Super Sports. *Doh!* Those went on and more than two seconds immediately fell off the lap time, the LC now able to pull 0.95 g in Turn 1, post an arousing 111.3-mph average speed through the esses, and keep it together through an entire lap.

Let's not overstate the point; this is still a fairly soft and supremely comfortable touring coupe, a sort of Buck Rogers Thunderbird seemingly targeted at people who remember Buck Rogers and Thunderbirds. It shows its roly-poly side when forced to do track work, but it does make the best of the situation and ultimately landed in the standings exactly where we thought it would.



**AN UPHILL RHYTHM SECTION. TONS OF FUN. AVERAGE SPEED THROUGH INFIELD:**

|                             |          |
|-----------------------------|----------|
| Chevy Camaro ZL1 1LE ...    | 82.9 mph |
| Mercedes-AMG GT R .....     | 82.9     |
| Porsche 911 Turbo S .....   | 81.0     |
| Nissan GT-R Track .....     | 79.4     |
| Chevy Camaro ZL1 .....      | 79.3     |
| Alfa Giulia Quad .....      | 77.3     |
| Porsche Panamera Turbo .... | 76.6     |
| Porsche 718 Cayman S .....  | 76.6     |
| Mercedes-AMG E63 S .....    | 75.2     |
| Honda Civic Si .....        | 75.1     |
| Lexus LC500 .....           | 75.1     |
| Subaru WRX .....            | 74.4     |
| BMW Alpina B7 .....         | 74.3     |
| BMW M240i .....             | 73.9     |
| Audi S8 Plus .....          | 73.7     |
| Subaru BRZ .....            | 73.0     |
| BMW M760i .....             | 72.9     |
| Fiat 124 Spider .....       | 72.5     |
| Mini Clubman JCW .....      | 71.6     |

# 2:59.2

**LL4** 2017 Porsche Panamera Turbo

Base Price: \$167,490 • **As-Tested Price: \$172,495**

550 hp • 4663 lb • 8.5 lb/hp

Tires: Pirelli P Zero PZ4

F: 275/35ZR-21 (103Y) R: 315/30ZR-21 (105Y)

Like the last Panamera we lapped at VIR, a first-gen Turbo S, this gen-two Turbo packs a 550-hp twin-turbo V-8. But the new car carries 229 more pounds than its predecessor. More weight with no additional power isn't typically a recipe for improved lap times.

But Porsche threw a bunch of technology at this 4663-pound hatch to combat the weight gain, including active anti-roll bars (\$5000), rear-axle steering (part of a \$5580 Sport package), and carbon-ceramic brake rotors (\$8960). The combined effectiveness of these systems means that the new car posts a lap time of 2:59.2, an improvement of 1.5 seconds, despite hitting a Vmax of 146.6 mph on the front straight, which is just 1.0 mph more than that of the old Turbo S.

All that tech, however, adds a layer of isolation that muddles the sensations a bit. Turning into the Climbing Esses at 128.5 mph, the steering remains aloof. The left-right-left-right sequence normally requires small, precise steering inputs. But the Panamera's autobahn tuning, which prioritizes high-speed stability, means that this section requires much more steering angle than anticipated. The active anti-roll bars do a remarkable job of keeping the body horizontal in corners, but that unnatural flatness exaggerates the sensation of isolation and diminishes that of speed. The Panamera has become more like the large sedans (S-class, 7-series, A8) it competes with for buyers and less like the slightly bigger-than-middleweight we first knew.

Still, the Panamera remains plenty capable. It hustles through the Climbing Esses faster than the 718 Cayman S (117.6 mph to 116.3), and equals the 718's 76.6-mph infield average—two sections of the track where finely tuned transient responses pay off. We'd just like to feel the sensations a little more, you know, like in the Porsches that wear numbers instead of names. Then again, none of those cars can whoosh four adults through Hog Pen in total comfort.



# 2:58.6

**LL3** 2017 Alfa Romeo Giulia Quadrifoglio

Base Price: \$82,095 • **As-Tested Price: \$90,245**

505 hp • 3753 lb • 7.4 lb/hp

Tires: Pirelli P Zero Corsa Asimmetrico 2

F: 245/35ZR-19 (93Y) R: 285/30ZR-19 (98Y)



**TOP SPEED OBSERVED  
ON TRACK:**

|                            |           |
|----------------------------|-----------|
| Porsche 911 Turbo S ...    | 161.3 mph |
| Mercedes-AMG GT R .....    | 159.9     |
| Chevy Camaro ZL1 .....     | 155.7     |
| Chevy Camaro ZL1 1LE ..... | 155.5     |
| Mercedes-AMG E63 S .....   | 154.8     |
| BMW M760i .....            | 150.5     |
| Nissan GT-R Track .....    | 150.1     |
| Audi S8 Plus .....         | 148.7     |
| BMW Alpina B7 .....        | 147.0     |
| Porsche Panamera Turbo ... | 146.6     |
| Alfa Giulia Quad .....     | 146.0     |
| Porsche 718 Cayman S ..... | 144.1     |
| Lexus LC500 .....          | 141.0     |
| BMW M240i .....            | 134.9     |
| Subaru WRX .....           | 125.8     |
| Mini Clubman JCW .....     | 122.6     |
| Honda Civic Si .....       | 121.5     |
| Fiat 124 Spider .....      | 120.6     |
| Subaru BRZ .....           | 119.5     |

There are few cars that, at first sight, inspire the emotional response the Giulia does. Unfortunately, aesthetics matter not one bit at Lightning Lap. Instead, performance and reliability are paramount. And reliability has been something of an issue for Alfa. While a new one hasn't yet stranded us, every Giulia we've driven outside of a press event has been finicky.

But with 505 Ferrari-derived horsepower from a twin-turbo V-6 and Pirelli P Zero Corsa Asimmetrico 2 tires, our expectations for the Giulia Quadrifoglio were high—indeed, Snoop Dogg high. The thin-rimmed steering wheel is ultra lively. Unlike the Panamera, the Giulia's steering leaps off-center and the car darts for apexes. It's almost as if there are only two modes: Straight Ahead and Maximum Cornering.

We've lamented, during street drives, the Quadrifoglio's wooden-feeling brake pedal. But at the end of VIR's front straight, where the Giulia clocks in at 146.0 mph, the binders are speed-shedding magic. The pedal still feels a bit numb, which makes it difficult to administer the modulation needed for trailing through a corner. But there's no denying the force of the brakes. Sparco buckets, a \$2750 option, are a must for any track-bound Alfa.

But on the first day of damp lapping, the Alfa began acting as if it were suffering from fuel starvation in the tight left-hand Turn 4, even as its gauge indicated a quarter-tank of gas. This can happen when driving a street car on a track, so we didn't think much of it. But then it happened again in the same spot, with three-quarters of a tank. And again in the right-hand Oak Tree.

With the mechanical glitches, it was difficult to find a rhythm with the Giulia. Our best time, 2:58.6, was on a ragged set of Pirellis. With some good fortune, the Alfa might have turned a quicker lap. Don't be surprised if you see another Quadrifoglio at a future Lightning Lap.



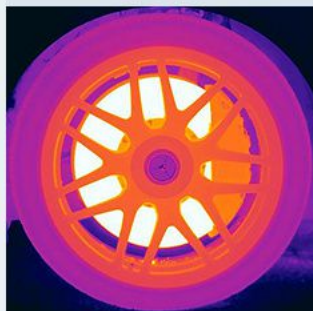


# DISCO INFERNO

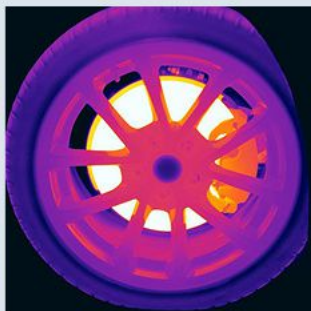
To stop or slow a car, brakes convert a car's motion, or kinetic energy, into heat energy via friction. Modern brakes get seriously hot. To capture just how hot, we called FLIR Systems, the Oregon-based masters of thermal imaging, and asked them to loan us their T1030sc thermal camera, which is capable of measuring temps from minus 40 up to 3632 degrees Fahrenheit with 98 percent accuracy. We used only about one-sixth of this \$50,000 camera's capability. To measure the temperatures of the front brake rotors comparably, we pulled into the south pits while still on a hot lap and without any cooling. The rotors on our cars glowed only when viewed through the FLIR camera, which captures surface temperature. For iron to glow red in daylight, the core temperature would need to reach about 900 degrees. Carbon-ceramic rotors safely operate at much higher temperatures, giving them better fade resistance.



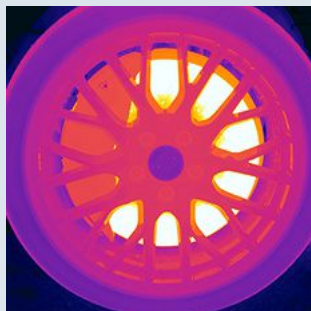
FLIR T1030SC



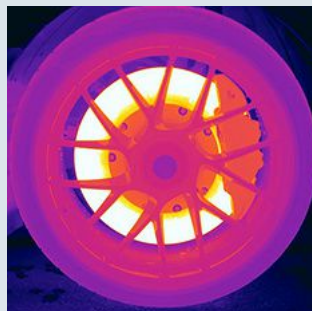
Mercedes-AMG E63 S, 1219° F



Subaru WRX Performance Package, 1144° F



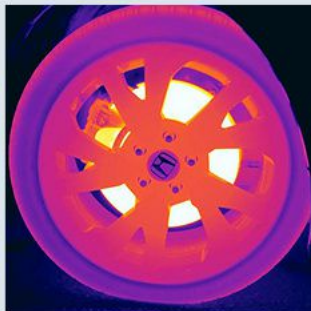
Porsche Panamera Turbo, 1035° F



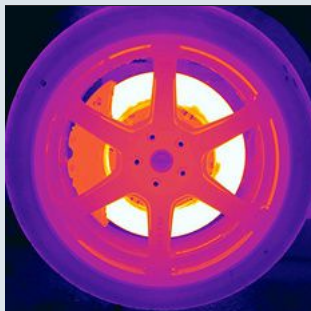
Porsche 911 Turbo S, 1035° F



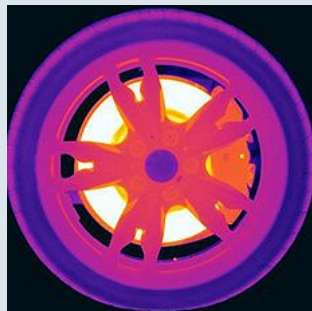
Mercedes-AMG GT R, 1027° F



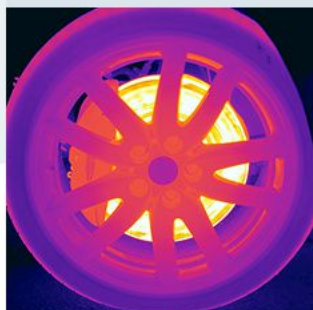
Honda Civic Si, 1019° F



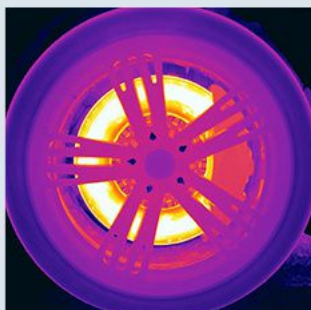
Nissan GT-R Track Edition, 989° F



BMW M240i, 981° F



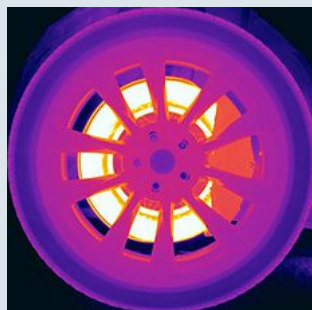
Mini Clubman JCW ALL4, 952° F



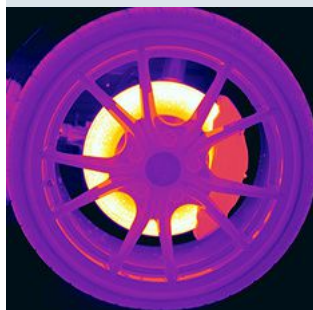
Chevrolet Camaro ZL1 1LE, 947° F



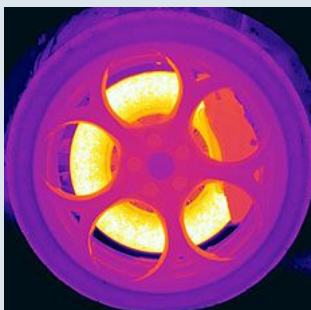
Fiat 124 Spider Abarth, 923° F



Lexus LC500, 919° F



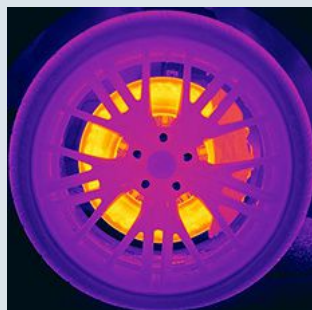
Porsche 718 Cayman S, 877° F



Alfa Romeo Giulia Quadrifoglio, 834° F



Subaru BRZ Performance Package, 766° F



Chevrolet Camaro ZL1, 669° F



# 2:58.3

**LL3** 2017 Porsche 718 Cayman S  
**Base Price: \$81,340 • As-Tested Price: \$94,925**  
**350 hp • 3162 lb • 9.0 lb/hp**  
**Tires: Pirelli P Zero PZ4**  
**F: 235/35ZR-20 (88Y) R: 265/35ZR-20 (95Y)**

We have to admit that the atavists who griped about the sound of the new turbo four-cylinder flatties in the 718 have a point. That old steel-cut song of the six has been replaced by a somewhat boomy and uninspiring tune that just doesn't flutter the heart. Fix this, Porsche, because the rest of the 718 is so magnificent. Really, for those who despair that they will never own a Ferrari or a McLaren, the 718 is an attainable and highly worthy alternative. The grip and chassis dynamics are stunning, our hands and feet and fanny no better connected to any car at this event than to the Cayman.

The boosted four-cylinder is an improvement over the flat-six by every objective measure, its extra 25 horsepower and 37 pound-feet of torque pushing the Cayman S to 144.1 mph down the front straight, 8.7 mph faster than the 2014 model. We logged the fast lap using the paddle shifters with stability control turned off, but came within 0.2 second of that time in Sport Plus with the seven-speed dual-clutch in full auto mode, the computers doing a fine job serving the right ratios at the right moment and the

**THE 0.6-MILE-LONG BACK STRAIGHT STARTS IN A SLOW CORNER, OAK TREE, AND ENDS AT SPEEDS NEARLY AS FAST AS THE FRONT STRAIGHT'S. SPEED GAINED ON THE BACK STRAIGHT:**

|                            |           |
|----------------------------|-----------|
| Mercedes-AMG GT R ...      | 111.3 mph |
| Mercedes-AMG E63 S .....   | 107.4     |
| Chevy Camaro ZL1 .....     | 106.6     |
| Porsche 911 Turbo S .....  | 106.4     |
| Nissan GT-R Track .....    | 106.0     |
| BMW M760i .....            | 104.9     |
| Audi S8 Plus .....         | 103.4     |
| BMW Alpina B7 .....        | 101.0     |
| Porsche Panamera Turbo ... | 99.4      |
| Chevy Camaro ZL1 1LE ..... | 98.6      |
| Alfa Giulia Quad .....     | 97.9      |
| BMW M240i .....            | 95.5      |
| Lexus LC500 .....          | 95.5      |
| Porsche 718 Cayman S ..... | 91.4      |
| Subaru WRX .....           | 77.0      |
| Honda Civic Si .....       | 74.8      |
| Mini Clubman JCW .....     | 73.6      |
| Fiat 124 Spider .....      | 72.3      |
| Subaru BRZ .....           | 69.9      |

stability control only there to finesse the rear end out of an overcooked corner. The 718's electronics put the GT-R's aging circuitry into sharp relief. See, Nissan, this is why you can't leave performance cars in the marketplace for nine years. After struggling with weather and heat for several days, the Cayman's best lap came on the final morning, when we managed to shave it down to 2:58.3. But rest assured, no other car's driver had more fun out there.

# 2:55.4

**LL3** 2018 Mercedes-AMG E63 S  
**Base Price: \$116,775 • As-Tested Price: \$135,260**  
**603 hp • 4602 lb • 7.6 lb/hp**  
**Tires: Michelin Pilot Sport 4S**  
**F: 265/35ZR-20 (99Y) R: 295/30ZR-20 (101Y)**

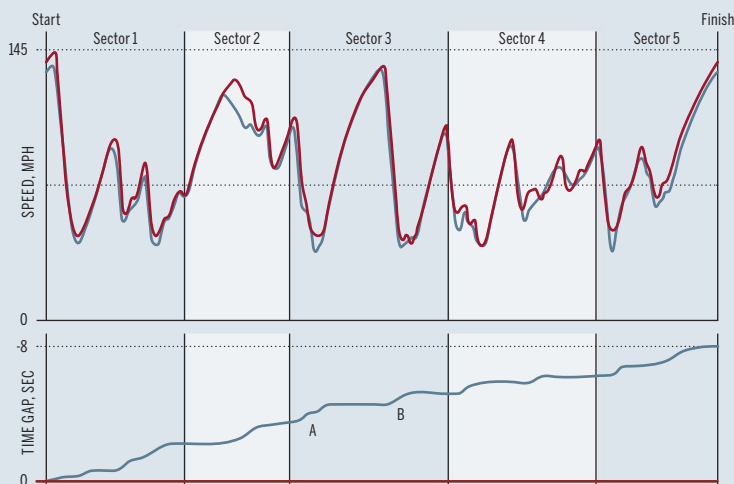
Eleven years ago, when we started this whole Lightning Lap thing, if anyone had said that Mercedes would be making the hottest sedan in the world, we would have pointed and laughed at that person. But there's nothing funny about a sedan that laps VIR in 2:55.4. This car is all business.

The E63 S's success on track starts with a long-established Affalterbach tactic: Cram the sedan's engine bay with as much horsepower as you can. This 603-hp 4.0-liter is more powerful than even AMG's track-beast GT R sports car (keep reading), and it

## THE GREAT EQUALIZER

The Porsche 718 Cayman S proved that even great-handling cars suffer greatly in the wet. Aside from being 7.1 mph slower down the front straight, the soaked 718 could brake on the back straight at only 0.87 g versus 1.07 g's on its quickest dry lap. And cornering in a wet Turn 1 was 0.93 g to the dry's 1.06. Predictably, little if any time was lost on the straights, but corner after corner the 718 in the wet lost time, owing big chunks of the 8.0-second delta to the braking zones for Oak Tree (A) and Bitch (B).

■ Wet lap 3:06.3  
 ■ Dry lap 2:58.3





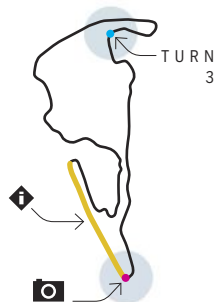
propels this altered E-class to 154.8 mph on the front straight. The next-closest sedan on our all-time list is the 3.0-mph-slower 2016 Cadillac CTS-V, which lapped VIR 1.4 seconds behind the E63 S, and, while supercharged LT4s sound great, they have nothing on this engine note. If we were to give awards for subjective engine sounds [see “Earworms,” page 061], the E63 S would be our undisputed V-8 champ.

Unlike AMGs of a decade ago, this car can turn and brake with the best of them. Michelin Pilot Sport 4S tires pull 1.00 g in Turn 1, and the all-wheel-drive traction allows the E63 S to exit that turn at 75.7 mph, trailing only the GT R, Camaro ZL1 1LE, and 911 Turbo S. This sets up a very fast entrance to one of VIR’s trickiest corners, Turn 3—or NASCAR Bend.

It’s tricky because there is a kink just before it, and you must ask the car to turn slightly, slow down, and then turn in for T3 in a short chute, all while a tire wall stands ready to document your failure. It is very easy to over- or undercook this sequence. The E63 S rotates under braking like a mid-engine car, meaning you can turn the car with the brakes alone.

Get through NASCAR, and the rest of the lap is mystical. The \$2500 Performance seats hold you in place, and the engine devours straightaways. Dionne Warwick must have tuned this car because it always seems to know what you’re about to do.

The E63 S never talks to walls because it fluently speaks the enthusiast’s language. A 4602-pound sedan so athletic means there is some serious magic happening at AMG right now.



# 2:53.2

**LL4** 2017 Nissan GT-R Track Edition

Base Price: \$129,685 • **As-Tested Price: \$129,685**

565 hp • 3925 lb • 6.9 lb/hp

Tires: Dunlop SP Sport Maxx GT 600 DSST CTT

F: 255/40ZRF-20 (97Y) R: 285/35ZRF-20 (100Y)

The aging champion that we first met way back in 2007 got yet another series of tweaks for 2017—this is starting to be like a Joan Rivers riff on facelifts—in order to remain relevant. The suspension on this, the middle-priced Track Edition, has been softened a bit, and the interior got a redesign and a larger touchscreen, plus some finer materials. The GT-R Premium is still cheaper at \$111,685, while the 600-hp NISMO calls for \$176,685. Nissan hasn’t said that it will replace the GT-R, nor has it given any indication that it will finally put this thoroughbred to pasture. In the meantime, it managed to pull this year’s fifth-fastest time, 2:53.2, though it did so while finishing at the bottom of the “really fast” class of cars.

This 565-hp version of the GT-R is incredibly quick for its size and 3925-pound heft, the car breaking 150 mph on the front straight and pulling 1.08 g’s in Turn 1, even as it sucked down a full tank of fuel



every 12 laps. It piled into the uphill esses at 128.1 mph and lost only 14.1 mph in the climb through that electrifying section, saying much about the driver's confidence. Still, the clunks and rattles from its dual-clutch transmission, the whirring of pumps, and the slightly digital way the electronics go about managing the torque to the four wheels—all the GT-R eccentricities we forgave years ago because the car was so fast and the technology so new—now seem rather antiquated as the march of progress infuses electronic controls with more subtlety. Compared with an Acura NSX, another all-wheel-drive car powered by a twin-turbo V-6, which is a few seconds quicker around VIR, the GT-R feels like a relic, a war weapon created for a battle fought long ago.

**❖ BLOW THE CORNER CALLED HORSE**  
SHOE AND A LAP IS OVER  
JUST AS IT BEGINS. GRIP  
IN TURN 1:

|                            |       |
|----------------------------|-------|
| Mercedes-AMG GT R .....    | 1.21g |
| Chevy Camaro ZL1 1LE ..... | 1.19  |
| Porsche 911 Turbo S .....  | 1.13  |
| Chevy Camaro ZL1 .....     | 1.11  |
| Nissan GT-R Track .....    | 1.08  |
| Porsche 718 Cayman S ..... | 1.06  |
| Mercedes-AMG E63 S .....   | 1.00  |
| Porsche Panamera Turbo ... | 0.98  |
| BMW Alpina B7 .....        | 0.97  |
| Alfa Giulia Quad .....     | 0.96  |
| Lexus LC500 .....          | 0.95  |
| BMW M240i .....            | 0.94  |
| Subaru WRX .....           | 0.94  |
| Audi S8 Plus .....         | 0.93  |
| BMW M760i .....            | 0.93  |
| Fiat 124 Spider .....      | 0.90  |
| Honda Civic Si .....       | 0.90  |
| Mini Clubman JCW .....     | 0.89  |
| Subaru BRZ .....           | 0.87  |

## 2:50.1

### LL3 2017 Chevrolet Camaro ZL1

Base Price: \$65,830 • As-Tested Price: \$68,225

650 hp • 3925 lb • 6.0 lb/hp

Tires: Goodyear Eagle F1 Supercar 3

F: 285/30ZR-20 (95Y) R: 305/30ZR-20 (99Y)

—  
The best laps usually happen in the early morning, when the air is cooler than Miles Davis. Later, the track surface turns to lava and no good can come of that. On our go-for-it lap, with the ZL1 huffing the dense morning air, we arrived at the Climbing Esses with greater speed than ever before and couldn't get it to turn into the first right. While the car mostly stayed on the tarmac, a curb strike bent a front wheel. By the time we changed it and got back in the ZL1, the track was about as cool as Kenny G.

In more favorable conditions, we're confident that the Camaro ZL1 had a 2:48 in it, maybe a 2:47. Even though we are disappointed by our 2:50.1, the regular ZL1 is still 0.8 second quicker than the 2015 Z/28.

Unlike the manual-only ZL1 1LE, this ZL1 arrived with the optional 10-speed automatic. Instant shifts and wafer-thin gaps between the gears kept the supercharged 6.2-liter V-8 near its 650-hp power peak at all times. There's only one place where the auto tripped us up. In the off-camber downhill left that follows the uphill esses, the gearbox downshifts exactly as the







As with the iLE version, managing the ZL1's power oversteer by dialing in the right amount of throttle is a full-time gig. The only difference is that, in the ZL1, you're doing it at slightly lower speeds, as it lacks the chassis changes, stickier rubber, and aero add-ons of its Maori-warrior brother. Another difference between the two: The ZL1 is a pleasant daily driver. It'll likely be more than enough car for even hard-core track rats, and you might just beat our time.

We measured the pass-by noise levels of our contenders as they accelerated toward the uphill esses. The loudest cars—the ZL1 and the E63 S—weren't much of a surprise. But the flat-four-powered Cayman S certainly was: It reported an astounding 100 decibels from a distance of 40 feet, which is about as loud as a gas-powered lawn mower.

A side-profile view of a red Chevrolet Camaro driving on a road. The car is in motion, as indicated by the blurred background and the motion blur on the wheels. The background consists of a green field and a dark, possibly forested area, all blurred to convey a sense of speed. The car's design features, such as its headlights and front grille, are visible.

# 2:46.8

**LL4** 2017 Porsche 911 Turbo S

Base Price: \$189,150

**As-Tested Price: \$192,310**

580 hp • 3579 • 6.2 lb/hp

Tires: Pirelli P Zero Corsa PZC4

F: 245/35ZR-20 (91Y) R: 305/30ZR-20 (103Y)

For 2017, Porsche added 20 horsepower and reworked some of the 911 Turbo S's electronic systems—the dual-clutch transmission will now bounce off the rev limiter in manual mode, and there's a new, less intrusive Sport mode for stability control. But we let the prescient PDK automatic shift itself at the 7200-rpm limit, switched stability control off, and rode all 580 horses bareback. Helping to lop off big chunks of time are new tires, track-ready Porsche-spec Pirelli P Zero Corsas that bring increases in stick over the stock P Zeroes. The result of the extra power and grip is that the new 911 Turbo S lapped VIR 4.4 seconds quicker than the Turbo S we tested three years ago and two-tenths of a second quicker than last year's GT3 RS.

G-forces in every corner increased compared with those of the last Turbo S, and the Pirellis remained remarkably consistent from lap to lap. More power and the ability to go to it sooner gave the Turbo S the highest peak speed on the track (161.3 mph) and the highest speed into the uphill esses (140.2 mph). The Turbo S entered the tricky off-camber downhill left that follows them 5.5 mph faster than before, slid sideways, and held a 3.5-mph higher speed through the apex than the 2014 Turbo S.

At slower speeds, the Turbo is a marvel of stability; but at the limit or beyond, the Turbo S acts tidier and lighter than its 3579-pound mass might suggest. A 61.1 percent rear weight bias means it'll rotate slightly in

THE LEFT-HAND  
TURN AT THE  
BOTTOM OF SPIRAL  
IS ONE OF THE SLOWEST  
PLACES ON THE TRACK,  
BUT SLOW IS ALL  
RELATIVE. WHEN WAS THE  
LAST TIME YOU CHUCKED  
A U-EY AT 45 MPH?  
SPIRAL MINIMUM SPEED:

|                             |          |
|-----------------------------|----------|
| Mercedes-AMG GT R ...       | 45.2 mph |
| Chevy Camaro ZL1 1LE .....  | 44.8     |
| Chevy Camaro ZL1 .....      | 44.7     |
| Porsche 911 Turbo S .....   | 43.8     |
| Alfa Giulia Quad .....      | 41.9     |
| Nissan GT-R Track .....     | 41.6     |
| Porsche Panamera Turbo .... | 41.6     |
| Mercedes-AMG E63 S .....    | 41.0     |
| Porsche 718 Cayman S .....  | 40.1     |
| Subaru WRX .....            | 40.1     |
| Lexus LC500 .....           | 39.8     |
| BMW Alpina B7 .....         | 39.4     |
| Audi S8 Plus .....          | 39.0     |
| Honda Civic Si .....        | 39.0     |
| Fiat 124 Spider .....       | 37.4     |
| BMW M760i .....             | 37.3     |
| Mini Clubman JCW .....      | 37.3     |
| Subaru BRZ .....            | 37.1     |
| BMW M240i .....             | 35.8     |

corners if provoked, but breaking the rear tires loose and swinging the rear around isn't threatening. Grip returns quickly, like in a much lighter car. It's not the ass-happy surgeon killer of the '70s; the tail steps out just enough to aim the nose through the corner, allowing you to return to full throttle sooner. With the extra power and 553 pound-feet of torque, you'll also find yourself at the start/finish before you know it.

# 2:45.7

**LL3** 2018 Chevrolet Camaro ZL1 1LE

Base Price: \$71,295 • **As-Tested Price: \$73,090**

650 hp • 3853 lb • 5.9 lb/hp

Tires: Goodyear Eagle F1 Supercar 3R

F: 305/30ZR-19 (98Y) R: 325/30ZR-19 (101Y)

Lion tamers. That's what we felt like after working the 3853-pound 650-hp Camaro ZL1 1LE to a 2:45.7 lap. The 1LE is a modified ZL1 designed for track use. It comes with spool-valve dampers in aluminum housings, steamroller Goodyear Eagle F1 Supercar 3R rubber, a wider mouth to better feed its 11 heat exchangers, dive planes that intimidate like face tattoos, and a carbon-fiber TV tray mounted to the trunklid. You need those parts. They're the chair and whip necessary to keep this lion from eating you.

In Turn 1, the 1LE holds on with 1.19 g's of grip, more than the old Z/28's 1.16 g's and a mere hundredth of a g off the lighter Corvette Z06 with the Z07 package. The 1LE's Recaros—perfect on the street—can't contend with the lateral forces and sign you up for an intimacy workshop with the door panel. Tellingly, Chevy installs a Sparco race seat and a six-point harness when company drivers set lap times. From Horse Shoe on, the 1LE exhibits razor-sharp turn-in, a neutral cornering attitude, and an immunity to curbing.

Even in Track mode, where the throttle pedal's responses are slightly reduced to make it easier to

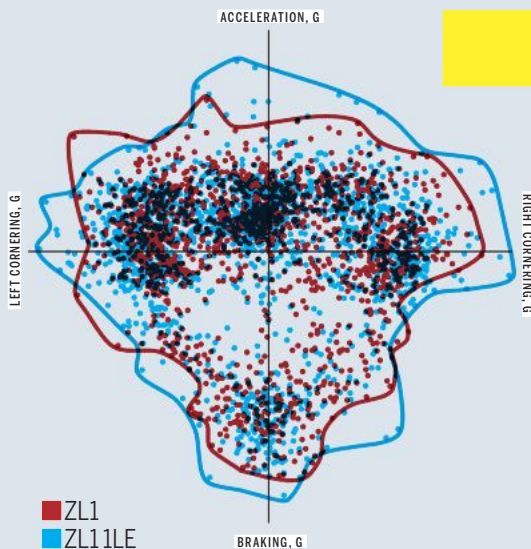






## GRIPPING

With identical engines, the Camaro ZL1 and its 1LE-spec sibling are within 0.2 mph of each other on the front straight (155.5 mph for the 1LE, 155.7 for the ZL1). But the 1LE puts down a lap 4.4 seconds quicker than its brother. This is thanks to aerodynamic tweaks (dive planes, larger splitter, carbon-fiber wing) and a chassis modified with Multimatic spool-valve dampers and stickier Good-years. The 1LE corners faster and brakes harder than the standard ZL1, hence the larger overall plot of lateral and longitudinal forces. Bonus: Put on your 3-D glasses to see the floating goat head!



dial in power, the accelerator remains as sensitive as an exposed nerve. A whiff too much puffer into the V-8 and the car's rear steps out, which is exactly what happened at the end of the sweeping curves of sector four and at the bottom of Spiral. In the Performance Traction Management's Race mode, traction control tries to take the skill out of putting the power down, but it's a bit too intrusive, i.e., slower. So we drove with all systems off.

At 155.5 mph on the front straight, it's possible to reach for the binders much later than you thought wise, but a longish brake pedal is unbecoming of a car that laps below 2:50. What angers this beast most is using too much power and too soon. Show some respect and it won't devour you.



# 2:43.4

**LL4** 2018 Mercedes-AMG GT R

Base Price: \$166,875

**As-Tested Price: \$195,875**

577 hp • 3668 lb • 6.4 lb/hp

Tires: Michelin Pilot Sport Cup 2 ZP

F: P285/30ZR-19 (94Y)

R: P335/25ZR-20 (99Y)

There are plenty of cars packing more than 577 horsepower on the Lightning Lap all-time leaderboard. There are some equipped with carbon-fiber body panels, torque tubes, drive-shafts, and wings. There are even cars

with underbody aerodynamic trickery to manage downforce in accordance with the car's wishes. But no car, other than the Mercedes-AMG GT R, has all those features plus a dial-in-your-own-talent, race-car-derived nine-mode traction control.

There is another car that wears the GT R's optional Michelin Pilot Sport Cup 2 tires, though. Michelin developed this version of the Cup 2 for use on the Chevrolet Corvette Z06 with the Z07 package [see "Mercedes Steals Corvette's Shoes," page 065]. The traction-control system, which metes out torque to those tires, allows the driver to progressively and quickly become comfortable. Getting up to speed? Dial it back, or left, one click. Getting cocky? Dial it back another. This grants the driver the confidence to

return to the throttle sooner and sooner in turns until he's at wide-open throttle long before most apexes.

We experimented with various traction-control settings for different corners. For areas of the track with high grip, we settled on position seven. Bitch falls off-camber and many cars oversteer on exit, so we dialed two clicks to the right (for more active traction control) on the back straight, one click left after Bitch, and one more left after exiting Spiral (bringing it back to position seven). So seamless are the traction-control interventions that, unless you're zeroed-in on the light ring around the dial that strobes when the system activates, you'll never know it's working.

The GT R's wide fenders, racy wing, and hidden moving aerodynamic elements promise grip and they deliver. You'll swear your eyeballs stretch over the front axle under braking into Bitch. That's where the \$8950 carbon-ceramic rotors and those optional Vette tires drop anchor with 1.27 g's of braking force. The ZL1 1LE may have nipped the GT R in the Climbing Esses (126.2 mph to the AMG's 124.9), but the additional speed was worth just 0.1 second in that section. In Turn 1, the GT R wrings last night's Scotch from your liver with 1.21 g's of lateral acceleration. The



steering and braking inputs require forces commensurate to the heavy jobs at hand. Pegging the lateral acceleration feels like hanging off a cliff by your fingertips. Short chutes between corners provide momentary relief from the full-body flex required to hold yourself in place. A qualifying-pace lap is an Olympic workout and ends with euphoric relief.

Fast corner exits are the GT R's game. The lap data reveals that, corner after corner, the GT R gets back to wide-open throttle earlier than any of the other cars. No corner better shows this than Hog Pen, where the rear-wheel-drive GT R exits at 112.0 mph. That speed obliterates the competition, even the all-wheel-drive Porsche 911 Turbo S. AMG knows that an epic lap is all in the exit speed. This car is stuck to the track and stuck to the top of the time sheet, hammering a lap in 2:43.4, a new LL4-class record and just 0.3 second behind the quickest car we've ever driven here, the five-times pricier 2015 Porsche 918 Spyder.







## MERCEDES STEALS CORVETTE'S SHOES

The Mercedes-AMG GT R's standard tire is the Michelin Pilot Sport Cup 2, but that's not the same Cup 2 our test car wore. The slightly wider shoes on this GT R were the ones that Chevrolet and Michelin developed for the 2015 Corvette Z06. Mercedes confirmed that the TPC-spec tires—meaning they meet GM's Tire Performance Criteria—are offered

from the factory. But since "Corvette tires" would look odd on an AMG window sticker, Mercedes instead calls them Extreme-Performance Sport tires, and the option is a no-cost upgrade. If the idea of having two versions of Cup 2s for a single model seems weird, that's because it is. German manufacturers are typically more concerned than their Yankee counterparts with the wet grip of their high-performance tires. For the Z06, Michelin was free to beef up dry grip, which is traditionally at odds with wet grip. The Vette team should be flattered that AMG's heaviest hitter is available with their tires, although they probably wouldn't like to learn that the GT R set a record for grip in Horse Shoe with 1.21 g's, nipping the Z06 by 0.01 g.



# DONE IN 60 SECONDS

Every lap ever. That's what you'll find here. We've lapped cop cars, SUVs, kit cars, and Jason Statham's co-stars. An electric car, one concept car, and a real race car, too. From slowest to fastest, the range is less than one minute. It should take you longer to read through all 220 of them.

**Lap Time, Min:Sec** (Class, Event)

**3:37.7** (Econobox, No.9)  
2015 Honda Fit EX

**3:29.3** (LL1, No.1)  
2006 Mazda MX-5

**3:27.3** (LL1, No.6)  
2012 Volkswagen Jetta GLI

**3:27.3** (LL1, No.7)  
2013 Fiat 500 Abarth

**3:26.6** (LL1, No.3)  
2008 Volvo C30 Version 2.0

**3:26.5** (LL1, No.1)  
2006 Honda Civic Si

**3:25.1** (LL1, No.1)  
2007 Volkswagen GTI

**3:24.8** (LL2, No.3)  
2008 Honda Civic Si Mugen

**3:24.1** (LL1, No.6)  
2012 Honda Civic Si

**3:23.0** (Cop Car, No.7)  
2013 Chevrolet Caprice PPV

**3:22.9** (LL1, No.2)  
2007 Mini Cooper S

**3:21.8** (LL2, No.3)  
2008 Volkswagen R32

**3:21.4** (LL1, No.7)  
2013 Ford Focus ST

**3:20.9** (LL1, No.1)  
2006 Ford Mustang GT

**3:20.8** (LL1, No.3)  
2008 Dodge Caliber SRT4

**3:20.8** (LL1, No.9)  
2016 Mazda MX-5 Miata Club

**3:20.6** (LL1, No.1)  
2006 Chevrolet Cobalt SS  
Supercharged

**3:20.4** (LL1, No.8)  
2014 Ford Fiesta ST

**3:19.7** (LL1, No.11)  
2017 Subaru BRZ  
Performance Package

**3:19.3** (LL1, No.4)  
2010 Volkswagen GTI

**3:19.3** (LL1, No.8)  
2015 Volkswagen GTI

**3:19.0** (LL1, No.1)  
2006 Mazda RX-8

**3:19.0** (LL2, No.3)  
2008 Subaru Impreza  
WRX STI

**3:18.6** (LL1, No.7)  
2013 Subaru BRZ

**3:18.4** (LL2, No.6)  
2012 Mini Cooper  
Coupe JCW

**3:18.2** (LL2, No.1)  
2006 Dodge Charger SRT8

**3:17.8** (Cop Car, No.7)  
2013 Dodge Charger Pursuit

**3:17.6** (LL1, No.8)  
2014 Ford Focus ST

**3:17.5** (LL2, No.3)  
2008 Infiniti G37S

**3:17.4** (SUV, No.6)  
2012 Jeep Grand Cherokee  
SRT8

**3:17.4** (Electric Car, No.10)  
2015 Tesla Model S P85D

**3:17.1** (LL1, No.4)  
2009 Mini Cooper JCW

**3:16.9** (LL1, No.11)  
2017 Fiat 124 Spider Abarth

**3:16.7** (LL2, No.5)  
2010 Mazda RX-8 R3

**3:16.6** (LL2, No.3)  
2008 Lotus Elise SC

**3:16.6** (LL1, No.4)  
2009 Subaru Impreza WRX  
hatchback

**3:16.5** (LL1, No.5)  
2011 Subaru Impreza WRX  
sedan

**3:16.3** (LL2, No.3)  
2008 Dodge Challenger SRT8

**3:16.2** (LL1, No.4)  
2010 Mazdaspeed 3

**3:16.0** (LL1, No.2)  
2007 Mazdaspeed 3

**3:16.0** (LL2, No.11)  
2017 Mini Clubman JCW ALL4

**3:15.7** (LL1, No.2)  
2007 Pontiac Solstice GXP

**3:15.6** (LL1, No.9)  
2015 Ford Mustang  
EcoBoost

**3:15.5** (LL1, No.8)  
2015 Subaru WRX

**3:15.4** (LL1, No.9)  
2015 Mini Cooper Hardtop JCW

**3:15.0** (LL2, No.3)  
2008 Honda S2000 CR

**3:14.8** (LL1, No.4)  
2010 Hyundai Genesis  
Coupe 3.8

**3:14.6** (LL2, No.3)  
2008 Audi S5

**3:14.6** (LL1, No.9)  
2015 Volkswagen GTI

**3:14.6** (LL1, No.11)  
2017 Honda Civic Si

**3:14.0** (LL2, No.3)  
2008 Lexus IS F

**3:14.0** (LL2, No.6)  
2012 Volkswagen Golf R

**3:13.9** (LL1, No.7)  
2013 Hyundai Genesis Coupe  
3.8 R-spec

**3:13.8** (LL1, No.5)  
2011 Hyundai Genesis Coupe  
3.8 R-spec

**3:13.8** (LL2, No.5)  
2011 Subaru Impreza WRX  
STI sedan

**3:13.8** (LL2, No.6)  
2012 BMW 335is

**3:13.7** (LL2, No.3)  
2008 BMW 135i

**3:13.5** (LL1, No.1)  
2006 Mitsubishi Lancer  
Evolution MR

**3:13.4** (LL2, No.8)  
2014 Lexus IS350 F Sport

**3:13.3** (LL2, No.3)  
2008 Mitsubishi Lancer  
Evolution MR

**3:13.3** (LL1, No.4)  
2010 Ford Mustang GT

**3:13.2** (LL2, No.7)  
2012 BMW 335i  
Sport Line

**3:13.0** (LL1, No.3)  
2008 Chevrolet  
Cobalt SS

**3:12.5** (LL1, No.1)  
2006 Nissan 350Z Track

**3:12.5** (LL1, No.5)  
2011 Ford Mustang V-6

**3:12.3** (LL2, No.9)  
2015 Volkswagen Golf R

**3:12.0** (LL2, No.4)  
2009 Nissan 370Z NISMO

**3:11.7** (LL2, No.2)  
2007 BMW Z4 M coupe

**3:11.5** (LL1, No.11)  
2018 Subaru WRX  
Performance Package

**3:11.3** (LL2, No.9)  
2015 Audi S3

**3:11.2** (LL3, No.2)  
2007 Audi RS4

**3:11.1** (SUV, No.6)  
2012 BMW X5 M

**3:11.0** (LL2, No.1)  
2007 Ford Shelby GT500

**3:10.8** (LL2, No.4)  
2010 Audi S4

**3:10.6** (LL2, No.5)  
2010 Mitsubishi Lancer  
Evolution SE

**3:10.5** (LL2, No.2)  
2007 BMW 335i coupe

**3:10.5** (LL2, No.8)  
2015 Subaru WRX STI

**3:10.4** (LL3, No.6)  
2012 BMW Z4 sDrive35is

**3:10.1** (LL2, No.6)  
2012 Dodge Charger SRT8

**3:10.0** (LL3, No.1)  
2006 BMW M6

**3:09.8** (LL3, No.7)  
2013 Audi S6

**3:09.5** (LL2, No.1)  
2006 Porsche Cayman S

**3:09.5** (LL2, No.4)  
2010 Chevrolet  
Camaro SS

**3:09.4** (LL2, No.6)  
2012 Dodge Challenger  
SRT8 392

**3:09.3** (LL2, No.1)  
2006 Chevrolet  
Corvette Z51

**3:09.2** (LL2, No.1)  
2006 Lotus Elise

**3:08.9** (LL3, No.5)  
2011 Jaguar XFR

**3:08.8** (LL2, No.9)  
2015 Alfa Romeo 4C

**3:08.6** (LL2, No.5)  
2011 Ford Mustang GT

**3:08.4** (LL2, No.4)  
2009 Audi TTS

**3:08.3** (LL3, No.5)  
2011 Lotus Evora

**3:08.0** (LL2, No.11)  
2017 BMW M240i

**3:07.7** (LL2, No.10)  
2016 Audi TTS

**3:07.6** (LL Transporter, No.11)  
2017 BMW M760i xDrive

**3:07.4** (LL2, No.4)  
2010 Ford Shelby GT500

**3:07.2** (LL2, No.8)  
2014 BMW M235i

**3:06.9** (LL3, No.5)  
2011 Mercedes-Benz  
E63 AMG

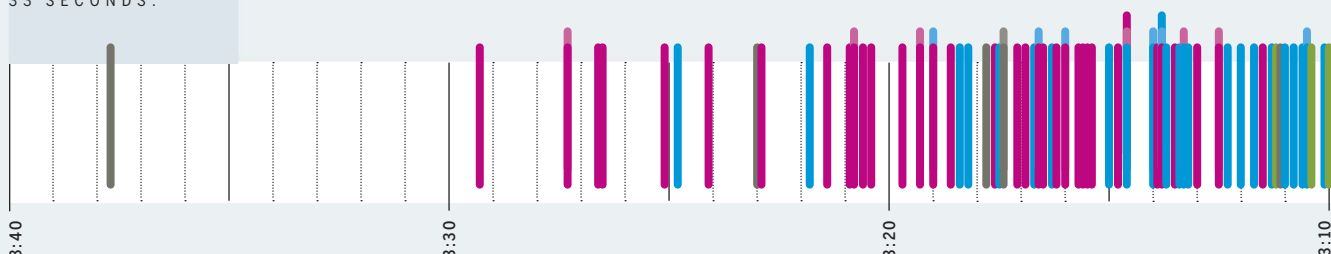
**3:06.8** (LL2, No.8)  
2014 Cadillac CTS Vsport

**3:06.7** (LL3, No.8)  
2014 Jaguar XFR-S

**3:06.6** (LL2, No.6)  
2011 BMW 1-series M

// BAR CODE

HERE YOU CAN SEE  
THE DIVERSE LEVEL  
OF PERFORMANCE  
WITHIN EACH  
CLASS. LL2, THE  
BLUE BARS, BOASTS  
THE LARGEST SPAN,  
3.3 SECONDS.





**3:06.5** (LL2, No.3)  
2008 Mercedes-Benz  
C63 AMG

**3:06.4** (LL3, No.4)  
2010 Jaguar XKR

**3:06.4** (Race Car, No.10)  
2016 Mazda MX-5 Miata  
Cup Car

**3:06.3** (LL3, No.6)  
2012 Mercedes-Benz C63  
AMG coupe

**3:05.9** (LL2, No.2)  
2007 Ford Shelby GT500

**3:05.9** (LL2, No.8)  
2014 Mercedes-Benz  
CLA45 AMG

**3:05.9** (LL3, No.10)  
2016 Lexus GS F

**3:05.8** (LL4, No.2)  
2007 Porsche 911 Turbo

**3:05.8** (LL3, No.4)  
2009 Porsche Cayman S

**3:05.8** (LL3, No.4)  
2009 Porsche 911 Carrera S

**3:05.8** (LL3, No.9)  
2015 Lexus RC F

**3:05.6** (LL2, No.3)  
2008 BMW M3 coupe

**3:05.4** (LL2, No.4)  
2009 BMW M3 coupe

**3:05.4** (LL2, No.5)  
2011 Lexus IS F

**3:05.3** (LL3, No.6)  
2012 Lotus Evora S

**3:05.2** (LL3, No.7)  
2013 BMW M5

**3:05.2** (LL2, No.9)  
2015 Ford Mustang GT

**3:05.0** (LL3, No.4)  
2009 Lotus Exige S 260 Sport

**3:04.9** (LL3, No.6)  
2012 Mercedes-Benz  
CLS63 AMG

**3:04.8** (LL2, No.6)  
2012 Audi TT RS

**3:04.8** (LL3, No.11)  
2018 Lexus LC500

**3:04.7** (LL3, No.7)  
2013 BMW M6

**3:04.6** (LL3, No.2)  
2007 Audi R8

**3:04.5** (LL3, No.2)  
2007 Lotus Exige S

**3:04.3** (LL3, No.7)  
2013 Audi RS5

**3:04.3**  
(LLTransporter, No.11)  
2017 BMW Alpina B7 xDrive

**3:04.2** (LL3, No.5)  
2011 Cadillac CTS-V coupe

**3:04.2** (LL3, No.7)  
2013 Porsche Boxster S

**3:04.0** (LL2, No.3)  
2009 Cadillac CTS-V sedan

**3:04.0** (LL2, No.5)  
2011 Ford Shelby GT500

**3:04.0** (LL1, No.10)  
2017 Chevrolet Camaro 1LE

**3:03.9** (LL3, No.6)  
2012 Porsche Cayman R

**3:03.9** (LL2, No.10)  
2016 Ford Focus RS

**3:03.8** (LL3, No.5)  
2011 Porsche Boxster Spyder

**3:03.6** (LL2, No.2)  
2007 Chevrolet Corvette Z51

**3:03.6**  
(LLTransporter, No.11)  
2017 Audi S8 Plus

**3:03.5** (LL3, No.10)  
2016 Dodge Charger SRT  
Hellcat

**3:03.0** (LL3, No.8)  
2014 Audi RS7

**3:02.8** (LL2, No.6)  
2012 Ford Mustang Boss 302  
Laguna Seca

**3:02.6** (LL3, No.8)  
2014 Porsche Cayman S

**3:02.2** (LL4, No.10)  
2016 Jaguar F-type Project 7

**3:02.1** (LL4, No.7)  
2013 Jaguar XKR-S

**3:01.9** (LL2, No.10)  
2016 BMW M2

**3:01.8** (LL3, No.2)  
2007 Porsche 911 GT3

**3:01.6** (LL3, No.1)  
2006 Dodge Viper  
SRT10 coupe

**3:01.5** (LL2, No.7)  
2013 Chevrolet  
Camaro SS 1LE

**3:01.2** (LL2, No.3)  
2008 Chevrolet Corvette Z51

**3:01.1** (LL3, No.1)  
2006 Chevrolet Corvette Z06

**3:01.0** (LL3, No.8)  
2015 Jaguar F-type R coupe

**3:00.7** (LL4, No.1)  
2006 Ford GT

**3:00.7** (LL4, No.6)  
2012 Porsche Panamera  
Turbo S

**3:00.7** (LL3, No.8)  
2015 BMW M4

**3:00.6** (LL3, No.7)  
2013 Ford Shelby GT500

**3:00.1** (LL3, No.8)  
2014 Mercedes-Benz  
E63 AMG S-model

**2:59.8** (LL2, No.9)  
2016 Cadillac ATS-V  
sedan

**2:59.5** (LL4, No.4)  
2010 Audi R8 5.2 FSI Quattro

**2:59.2** (LL3, No.9)  
2015 Mercedes-AMG C63 S

**2:59.2** (LL3, No.9)  
2016 Cadillac ATS-V coupe

**2:59.2** (LL4, No.11)  
2017 Porsche Panamera Turbo

**2:59.1** (LL4, No.8)  
2014 Jaguar XKR-S GT

**2:59.1** (LL4, No.8)  
2014 Mercedes-Benz  
SL63 AMG

**2:59.0** (LL3, No.3)  
2009 Nissan GT-R  
(all-season tires)

**2:58.9** (LL3, No.7)  
2013 Porsche 911 Carrera S

**2:58.8** (LL2, No.4)  
2010 Chevrolet Corvette  
Grand Sport

**2:58.6** (LL3, No.11)  
2017 Alfa Romeo Giulia  
Quadrifoglio

**2:58.3** (LL3, No.11)  
2017 Porsche 718 Cayman S

**2:58.2** (LL3, No.2)  
2007 Chevrolet Corvette Z06

**2:58.0** (LL4, No.5)  
2011 Mercedes-Benz  
SLS AMG

**2:58.0** (LL3, No.7)  
2012 Mercedes-Benz C63  
AMG Black Series

**2:57.6** (Kit Car, No.4)  
2009 Ariel Atom 3

**2:57.5** (LL4, No.5)  
2011 Porsche 911 Turbo S

**2:57.5** (LL2, No.7)  
2013 Chevrolet Camaro ZL1

**2:57.5** (LL4, No.8)  
2014 Audi R8 V-10 Plus

**2:57.4** (LL3, No.2.5)  
2008 Dodge Viper SRT10

**2:56.8** (LL3, No.9)  
2016 Cadillac CTS-V

**2:56.1** (LL4, No.10)  
2017 Audi R8 V-10 Plus

**2:55.9** (LL4, No.5)  
2011 Porsche 911 GT3 RS

**2:55.6** (LL3, No.3)  
2009 Nissan GT-R

**2:55.4** (LL3, No.11)  
2018 Mercedes-AMG E63 S

**2:55.1** (LL5, No.7)  
2012 Lexus LFA

**2:54.8** (LL2, No.10)  
2017 Chevrolet Camaro SS  
1LE

**2:54.6** (LL5, No.3)  
2008 Ferrari 430 Scuderia

**2:54.0** (LL3, No.10)  
2016 Porsche Cayman GT4

**2:53.9** (LL5, No.4)  
2010 Lamborghini Murciélago  
LP670-4 SV

**2:53.8** (LL2, No.8)  
2014 Chevrolet  
Corvette Stingray

**2:53.5** (LL3, No.5)  
2011 Chevrolet Corvette Z06

**2:53.2** (LL3, No.6)  
2012 Nissan GT-R

**2:53.2** (LL4, No.11)  
2017 Nissan GT-R Track  
Edition

**2:52.9** (LL4, No.10)  
2016 BMW M4 GTS

**2:52.3** (Kit Car, No. 4)  
2009 KTM X-Bow

**2:51.8** (LL3, No.4)  
2009 Chevrolet Corvette ZR1

**2:51.8** (LL5, No.5)  
2010 Lamborghini Gallardo  
LP570-4 Superleggera

**2:51.8** (LL2, No.10)  
2016 Ford Mustang Shelby  
GT350R

**2:51.2** (LL4, No.8)  
2014 Porsche 911 Turbo S

**2:51.0** (LL4, No.9)  
2016 Mercedes-AMG GT S

**2:50.9** (LL3, No.8)  
2015 Chevrolet Camaro Z/28

**2:50.8** (LL5, No.8)  
2014 Ferrari F12berlinetta

**2:50.7** (LL3, No.6)  
2012 Chevrolet Corvette ZR1

**2:50.4** (LL4, No.9)  
2015 Porsche 911 GT3

**2:50.2** (LL4, No.10)  
2017 Acura NSX

**2:50.1** (LL3, No.11)  
2017 Chevrolet Camaro ZL1

**2:49.9** (LL4, No.7)  
2012 Ferrari 458 Italia

**2:49.9** (LL4, No.8)  
2014 SRT Viper TA

**2:49.8** (LL5, No.5)  
2012 Mosler Photon

**2:49.4** (LL4, No.8)  
2015 Nissan GT-R NISMO

**2:48.6** (LL3, No.3)  
2008 Dodge Viper SRT10  
ACR coupe

**2:47.5** (LL5, No.9)  
2015 Lamborghini  
Huracán LP610-4

**2:47.4** (LL4, No.10)  
2016 McLaren 570S

**2:47.1** (LL3, No.10)  
2017 Chevrolet Corvette  
Grand Sport

**2:47.0** (LL4, No.10)  
2016 Porsche 911 GT3 RS

**2:46.8** (LL4, No.11)  
2017 Porsche 911 Turbo S

**2:45.9** (LL5, No.3)  
2009 Mosler MT900S

**2:45.8** (LL5, No.9)  
2015 McLaren 650S Spider

**2:45.7** (LL3, No.11)  
2018 Chevrolet Camaro  
ZL1 1LE

**2:45.1** (LL5, No.10)  
2016 Ferrari 488GTB

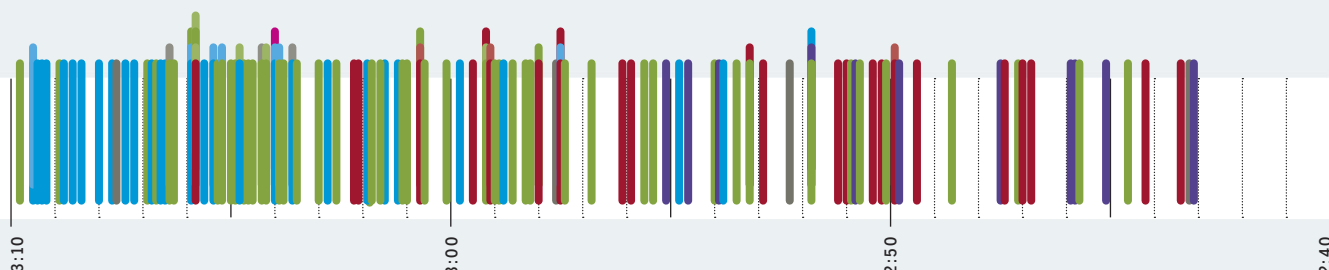
**2:44.6** (LL3, No.9)  
2015 Chevrolet Corvette Z06

**2:44.2** (LL4, No.10)  
2016 Dodge Viper ACR

**2:43.4** (LL4, No.11)  
2018 Mercedes-AMG GT R

**2:43.2** (Concept Car, No.10)  
2016 Lexus RC F GT concept

**2:43.1** (LL5, No.8)  
2015 Porsche 918 Spyder





NHRA CHAMPIONSHIP DRAG RACING  
2035 FINANCIAL WAY, GLENDORA, CALIFORNIA 91741-4602 • (626)914-4761

To: FCA US LLC, regarding its Dodge brand

Date: November 30, 2016

This letter verifies that on Monday, November 21<sup>st</sup>, 2016 at Gainesville Raceway in Gainesville, Florida, the Dodge Challenger SRT Demon ran the quarter mile in an elapsed time of 9.650 seconds at 140.09 miles per hour. Both the elapsed time and the speed on this run exceeded the limits on 2008 OEM model-year and newer production cars and therefore violate our rules. The car exceeded our limits of 9.99 seconds and 135 miles per hour. Therefore, before this car can be run again at an NHRA Member Track, it must be brought into compliance with the rules and regulations found in Section 4 of the NHRA Rulebook. If you have any questions concerning this letter or the rules in Section 4 of the NHRA Rulebook, please contact me.

Sincerely,

A handwritten signature in white ink, appearing to read "Glen Gray", is written over a dark, textured background.

Glen Gray  
NHRA  
Vice President, Technical Operations



***SORRY. NOT SORRY.***



**OFFICIALLY BANNED BY THE NHRA**

***DOMESTIC. NOT DOMESTICATED.***

Dodge is a registered trademark of FCA US LLC.

# WeatherTech®



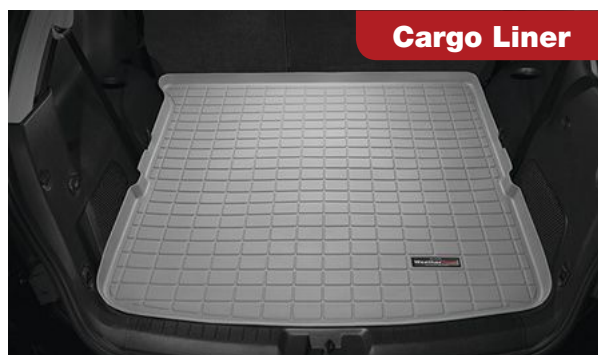
## FloorLiner™

- Provides “absolute interior protection”™
- Laser measured to perfectly fit your vehicle
- Has channels to carry fluids and debris to a lower reservoir
- Material provides soft touch top, rigid core strength and bottom surface friction

See our full line of Automotive Accessories at **WeatherTech.com**



## AlloyCover™



## Cargo Liner



## Custom-Fit Car Covers

### Accessories Available for

Acura · Audi · BMW · Buick · Cadillac · Chevrolet · Chrysler · Dodge · Ferrari · Ford · GMC · Honda · Hummer · Hyundai · Infiniti · Isuzu · Jeep · Kia · Land Rover · Lexus · Lincoln · Maserati · Mazda · Mercedes-Benz · Mercury · Mini · Mitsubishi · Nissan · Oldsmobile · Plymouth · Pontiac · Porsche · Saab · Saturn · Scion · Subaru · Suzuki · Toyota · Volkswagen · Volvo

**Order Now: 800-441-6287**



American Customers  
**WeatherTech.com**

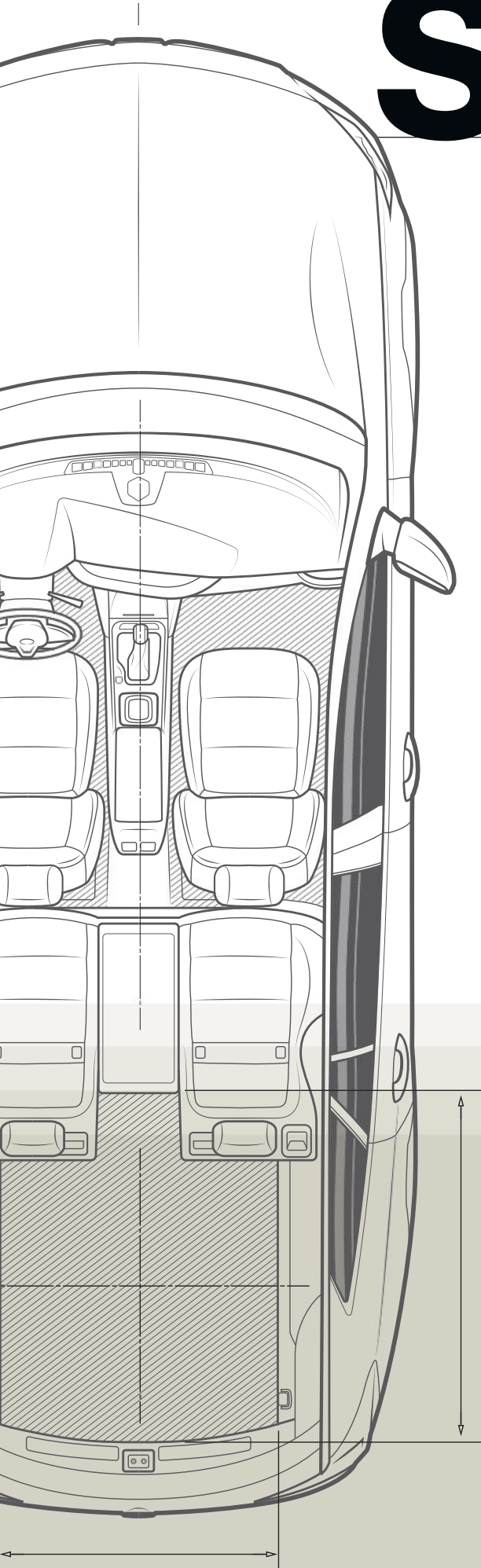


Canadian Customers  
**WeatherTech.ca**



European Customers  
**WeatherTech.eu**





# Stations of the Wagon

**The evolution and  
persistence of a uniquely  
American art form.**

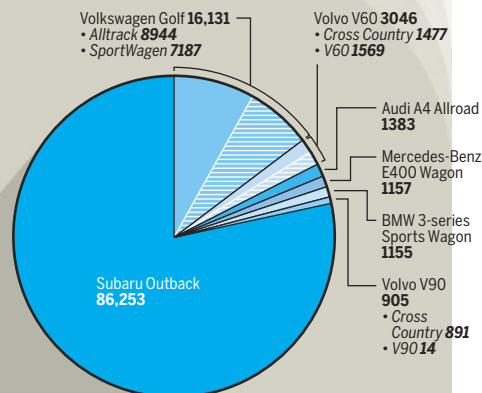
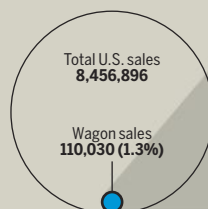
**T**he station wagon is the quintessential American vehicle. A petroleum-powered update of the covered wagons that once traversed the Oregon Trail, modern 20th century versions imbued decades of family vacations with the spirit of Manifest Destiny. Station wagons were the Eisenhower interstate system's original software, making convenient the realization of our most fundamental freedom, the freedom to explore.

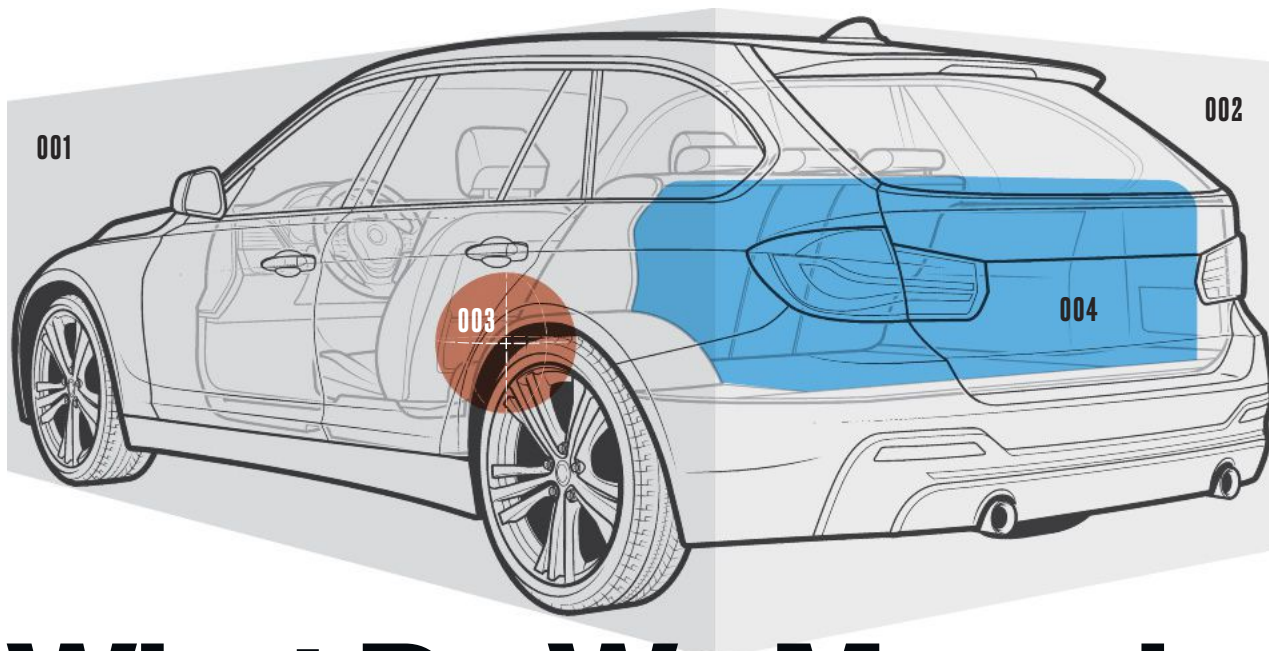
The wagon's source code has since been hacked; it now supports the utility vehicles that dominate U.S. sales. Three-row seating, panoramic sunroofs, tailgates—we owe them all to the station wagon. Even pickups have achieved their market dominance by following the path paved by wagons, which evolved from beasts of burden—commercial-depot hacks used to transport passengers and luggage to and from train stations—into plush, passenger-focused vehicles.

Yet wagons themselves are in danger of extinction, their widespread mid-century popularity inverted. The last best-selling car in the United States to have a wagon variant was the 1996 Ford Taurus. Much like that other uniquely American art form, jazz, wagons have become a genre favored by only small numbers of loyalists, purists, and kooks. We resemble all three, which is why we've assembled the dossier that follows, an exploration and explanation of how and why the wagon is still relevant.

## Magnificent Seven

Through the first half of the year, wagons have accounted for 110,030 U.S. sales, or just 1.3 percent of the market. And most of them are Subarus.





# What Do We Mean by “Wagon”?

**A clear-headed vehicle classification rule in the increasingly murky marketplace. Kind of. Sort of.**

**\_by Jeff Sabatini**

If you are old enough to have a teenager living under your roof, you would recognize the Western Electric 500-series telephone in an instant. And yet, you’d also need to explain what it is to said teenager, notwithstanding the phone obsession of the current crop of adolescents. As wagons become subsumed and superseded by crossovers—SUVs built on carlike unibodies instead of on separate body and frame structures—we imagine soon running into similar problems with Ford Country Squires and Oldsmobile Vista Cruisers.

Indeed, it is growing harder to differentiate between wagons and crossovers. And then there is the slippery slope that is the butch wagon. The popularity of the original, the Subaru Outback, has led Volkswagen Group to follow suit with the clad-and-lifted Audi A4 Allroad and Volkswagen Golf Alltrack. Volvo’s Cross Country wagons are veterans of the segment, with the company currently offering quasi-ruggedized versions of the V60 and V90. And now even Buick,

that mid-century purveyor of half-timbered charabancs such as the 1947 Roadmaster Estate, puts a foot on the gravel with the upcoming Regal TourX. Should any of these vehicles be considered station wagons? Is that computer in your pocket really a phone?

Automotive nomenclature being what it is—as murky as the mud puddles those AllCrosses and BackTraXes and CroSSports are designed to ford—there’s no definitive definition for the wagon. Try to write one yourself and you’ll see the trouble. Is a

## Wagon Specs, A–V

The days when every sedan formed the basis for coupe, convertible, and wagon body styles are long gone. But with carmakers continually looking for new niches, don’t be surprised if the number of wagon models grows from the 10 available in 2018. We highlight eight here. See page 074 for the Mercedes-Benz E400 and page 080 for the new Porsche Panamera Sport Turismo.



**2018 Audi A4 Allroad**

**VEHICLE TYPE:** front-engine, all-wheel-drive, 5-passenger, 4-door hatchback  
**BASE PRICE:** \$45,475  
**ENGINE:** turbocharged and intercooled DOHC 16-valve 2.0-liter inline-4, 252 hp, 273 lb-ft  
**TRANSMISSION:** 7-speed dual-clutch automatic with manual shifting mode  
**DIMENSIONS**  
**WHEELBASE:** 110.9 in  
**LENGTH:** 187.0 in  
**WIDTH:** 72.5 in  
**HEIGHT:** 58.8 in  
**PASSENGER VOLUME:** 94 cu ft  
**CARGO VOLUME:** 24 cu ft  
**FUEL ECONOMY**  
**EPA COMBINED/CITY/HWY:** 25/22/30 mpg

Once the purveyor of “Avants” in many sizes, Audi now offers a U.S. wagon lineup of one: this high-riding A4. (The company does sell a plug-in-hybrid A3 hatch.)



**2018 BMW 3-series Sports Wagon**

**VEHICLE TYPE:** front-engine, all-wheel-drive, 5-passenger, 4-door hatchback  
**BASE PRICE:** \$45,445–\$46,945  
**ENGINES:** turbocharged and intercooled DOHC 16-valve 2.0-liter diesel inline-4, 180 hp, 280 lb-ft; turbocharged and intercooled DOHC 16-valve 2.0-liter inline-4, 248 hp, 258 lb-ft  
**TRANSMISSION:** 8-speed automatic with manual shifting mode  
**DIMENSIONS**  
**WHEELBASE:** 110.6 in  
**LENGTH:** 182.8 in  
**WIDTH:** 71.3 in  
**HEIGHT:** 56.5 in  
**PASSENGER VOLUME:** 97 cu ft  
**CARGO VOLUME:** 28 cu ft  
**FUEL ECONOMY**  
**EPA COMBINED/CITY/HWY:** 26–34/23–30/33–40 mpg

With the X1 and X3 obsoleting the station wagon for most, BMW has simplified its 3-series wagon offerings, doing away with manual transmissions and six-cylinders but keeping a diesel.



#### 001. LENGTH VS. HEIGHT

Wagons are longer relative to their height than crossovers. This is the foundation of their sleek proportions.

#### 002. WIDTH VS. GROUND CLEARANCE

Wagons are also narrower and ride lower to the pavement. Ground clearance is for crossovers.

#### 003. CENTER OF GRAVITY

Their dimensions give wagons much lower centers of gravity than crossovers, improving handling and ride quality.

#### 004. CARGO AREA

Measured floor to roof, wagons may have less overall cargo volume, but they generally stow more luggage and gear without obstructing the rear view, due to the orientation of their cargo holds.

wagon simply a four-door, two-box design with an enclosed cargo space? Well, many automakers have offered two-door wagons in the past, cars such as the Chevrolet Nomad, Ford Pinto, and Volkswagen Fox. A wagon surely has to be car-based, though, right? Not necessarily. The original Chevrolet Suburban was called a wagon for decades. And let's not forget the Jeep Grand Wagoneer, which has wagon right there in its name. Even the first Chrysler minivan was called the "magic wagon"; its trick was that it made conventional station wagons all but disappear.

If we wanted to be perverse, we could say all crossovers are wagons. In our spec panels, we refer to almost every two-box design as a hatchback. But for our purposes here, that won't do.

Instead, let's work backward to try to define what it is that makes a wagon not a crossover and a crossover not a wagon. Start with the current production wagons that are indisputable: the BMW 3-series Sports Wagon, the Mercedes-Benz E-class

wagon, and the Volvo V90. To our eyes, each one is a stunner, its good looks borne of the right stance—low and long. These proportions are what make a wagon look more like a car than a truck, and in these cars, they are similar: a length about 2.6 times the width, and a width about 1.3 times the height. Recently departed wagons such as the Dodge Magnum and the E61 BMW 5-series had the same ratios. This is our modern-wagon golden mean.

But what's truly interesting is that when you look at the crossovers being sold by BMW, Mercedes, and Volvo, you find another set of consistent proportions. The X3, GLE, and XC90 all have lengths about 2.5 times their widths, and widths about 1.1 times their heights. And running the numbers on other wagonoidal vehicles produces predictable results. Butch wagons tend to have the higher length-to-width ratio of true wagons but the lower width-to-height ratio of crossovers due to their increased ride heights. More conventional hatchbacks are the opposite, since they're shorter and lack the wagon's cargo space.

Now, does this mean that the Volkswagen Golf SportWagen isn't a wagon? Its length-to-width ratio comes up a little short, according to our definition. But surely the Golf is a wagon and so is the Subaru Outback, which by virtue of its prodigious ground clearance doesn't quite stack up, either. Yet, they both look the part, and each has a long lineage as a wagon. Math be damned then—the elephant test is good enough for us. When it comes to wagons, we know one when we see it.



#### 2018 Buick Regal TourX

**VEHICLE TYPE:** front-engine, all-wheel-drive, 5-passenger, 4-door hatchback

**BASE PRICE:** \$29,995

**ENGINE:** turbocharged and intercooled DOHC 16-valve 2.0-liter inline-4, 250 hp, 295-lb-ft

**TRANSMISSION:** 8-speed automatic with manual shifting mode

#### DIMENSIONS

**WHEELBASE:** 111.4 in

**LENGTH:** 196.3 in

**WIDTH:** 73.3 in

**HEIGHT:** 58.4 in

**PASSENGER VOLUME:** 101 ft

**CARGO VOLUME:** 33 cu ft

#### FUEL ECONOMY

**EPA COMBINED/CITY/HWY:** 21/18/26 mpg

(C/D est)

Too bad it's the wrong Opel. The TourX is a handsome wagon, but you should see the Opel Insignia equivalent without the silly black plastic knee socks.

#### 2018 Jaguar XF Sportbrake

**VEHICLE TYPE:** front-engine, all-wheel-drive, 5-passenger, 4-door hatchback

**BASE PRICE:** \$71,445

**ENGINE:** supercharged and intercooled DOHC 24-valve 3.0-liter V-6, 380 hp, 332-lb-ft

**TRANSMISSION:** 8-speed automatic with manual shifting mode

#### DIMENSIONS

**WHEELBASE:** 116.5 in

**LENGTH:** 195.1 in

**WIDTH:** 74.0 in

**HEIGHT:** 58.9 in

**PASSENGER VOLUME:** 99 cu ft

**CARGO VOLUME:** 32 cu ft

#### FUEL ECONOMY

**EPA COMBINED/CITY/HWY:** 21/18/26 mpg

(C/D est)

This winter, Jaguar brings a proper wagon back to the U.S. market for the first time since the unicorn X-type Sportwagon—only 1602 were sold—departed in 2008.

#### 2018 Subaru Outback

**VEHICLE TYPE:** front-engine, all-wheel-drive, 5-passenger, 4-door hatchback

**BASE PRICE:** \$26,810–\$36,310

**ENGINES:** DOHC 16-valve 2.5-liter flat-4, 175 hp, 174 lb-ft; DOHC 24-valve 3.6-liter flat-6, 256 hp, 247 lb-ft

**TRANSMISSION:** continuously variable automatic with manual shifting mode

#### DIMENSIONS

**WHEELBASE:** 108.1 in

**LENGTH:** 189.6 in

**WIDTH:** 72.4 in

**HEIGHT:** 66.1 in

**PASSENGER VOLUME:** 108 cu ft

**CARGO VOLUME:** 36 cu ft

#### FUEL ECONOMY

**EPA COMBINED/CITY/HWY:** 22–28/20–25/

27–32 mpg

The best-selling wagon in the U.S., period. As noted, Subaru sells more wagons than all the rest of the manufacturers combined.

#### 2017 Volkswagen Golf Alltrack/SportWagen

**VEHICLE TYPE:** front-engine, front- or all-wheel-drive, 5-passenger, 4-door hatchback

**BASE PRICE:** \$22,400–\$26,670

**ENGINE:** turbocharged and intercooled DOHC 16-valve 1.8-liter inline-4, 170 hp, 184 or 199 lb-ft

**TRANSMISSIONS:** 5-speed manual, 6-speed manual, 6-speed automatic with manual shifting mode

#### DIMENSIONS

**WHEELBASE:** 103.5–103.7 in

**LENGTH:** 179.6–180.2 in

**WIDTH:** 70.8 in

**HEIGHT:** 58.3–59.5 in

**PASSENGER VOLUME:** 94 cu ft

**CARGO VOLUME:** 30 cu ft

#### FUEL ECONOMY

**EPA COMBINED/CITY/HWY:** 25–29/22–25/

30–35 mpg

You can't get a diesel VW wagon anymore, but now you can have your Golf wagon with all-wheel drive. Or opt for the fancier Alltrack, with cladding and the slightest of lifts.

#### 2018 Volvo V60 Cross Country

**VEHICLE TYPE:** front-engine, front- or all-wheel-drive, 5-passenger, 4-door hatchback

**BASE PRICE:** \$39,245–\$42,845

**ENGINES:** turbocharged and intercooled DOHC 16-valve 2.0-liter inline-4, 240 hp, 258 lb-ft; turbocharged, supercharged, and intercooled DOHC 16-valve 2.0-liter inline-4, 302 hp, 295 lb-ft

**TRANSMISSION:** 8-speed automatic with manual shifting mode

#### DIMENSIONS

**WHEELBASE:** 109.2–109.3 in

**LENGTH:** 182.5–182.6 in

**WIDTH:** 71.9 in

**HEIGHT:** 58.4–60.8 in

**PASSENGER VOLUME:** 94 cu ft

**CARGO VOLUME:** 21 cu ft

#### FUEL ECONOMY

**EPA COMBINED/CITY/HWY:** 22–29/20–25/

27–36 mpg

The stubby V60 is almost more of an oversized hatchback than a wagon, unless, of course, you are looking at it through glasses tinted by Volvo's wagon heritage.

#### 2018 Volvo V90 Cross Country

**VEHICLE TYPE:** front-engine, front- or all-wheel-drive, 5-passenger, 4-door hatchback

**BASE PRICE:** \$50,945–\$57,095

**ENGINES:** turbocharged and intercooled DOHC 16-valve 2.0-liter inline-4, 250 hp, 258 lb-ft; turbocharged, supercharged, and intercooled DOHC 16-valve 2.0-liter inline-4, 316 hp, 295 lb-ft

**TRANSMISSION:** 8-speed automatic with manual shifting mode

#### DIMENSIONS

**WHEELBASE:** 115.8 in

**LENGTH:** 194.3–194.4 in

**WIDTH:** 74.0 in

**HEIGHT:** 58.1–60.7 in

**PASSENGER VOLUME:** 98 cu ft

**CARGO VOLUME:** 34 cu ft

#### FUEL ECONOMY

**EPA COMBINED/CITY/HWY:** 25–27/22–24/

29–34 mpg

Volvo offers wagons in both plain and butch, although the unfestooned special-order-only V90 will be as rare as a pink Polestar. The V90 is built in Sweden alongside its sister ute, the XC90.

# Enemy





# of the Estate

We stage a battle of the Benzes to prove the primacy of wagons.

\_by Jeff Sabatini \_photography by Marc Urbano



◀  
**MERCEDES-AMG  
GLE43 4MATIC**

Price: \$85,875  
Power: 362 hp  
Torque: 384 lb-ft  
Weight: 5089 lb  
C/D observed: 15 mpg

▲  
**MERCEDES-BENZ  
E400 4MATIC WAGON**

Price: \$89,065  
Power: 329 hp  
Torque: 354 lb-ft  
Weight: 4443 lb  
C/D observed: 18 mpg



# **“The good news,” we explained to Mercedes’ tireless public relations man, “is that we can guarantee you a comparo win.”**

So there it is, angry letter writers: We do rig these things.

Or at least we did in this apples-to-pears contest, launched with a preconceived notion. It would be a stretch to call it a theory, as that might suggest the application of scientific method. At the onset, though, we hypothesized that pitting an E-class wagon against a similarly sized utility vehicle, the GLE-class, would result in a victory for the former. And it did. But this comparo is not so much about determining a winner as it is about explaining why the wagon won.

Why, indeed? In the hope that we might convince you, the car-buying public (and maybe even the carmaking companies), that station wagons should rightfully account for a greater share of sales against crossovers. Does this qualify as service journalism? Let us answer that. Yes.

We chose to compare Mercedes-Benzes because the all-new 2017 E-class wagon represents the pinnacle of the species, the Benz Mercedes tells us is most favored by those outsize earners in the top tax bracket of 39.6 percent. See? Being rich means you’re smart.

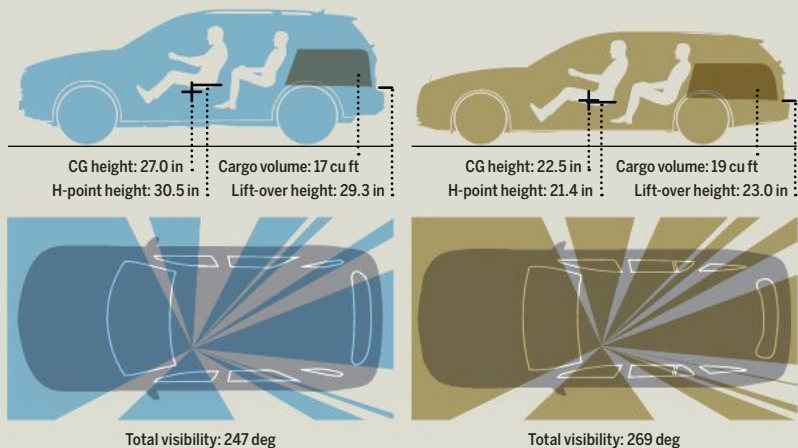
Still, most people shopping for a Benz hauler opt instead for a GLE, which outsells the wagon by a 23-to-1 ratio. The erstwhile M-class, the first Mercedes-Benz SUV offered in the U.S., has since followed the trend in shifting its presentation from off-roader to crossover. While the current iteration has been on the market since the 2012 model year, the name changed from M-class to GLE for 2016 and our AMG GLE43 variant is new for 2017.

Its marquee feature is the twin-turbo 3.0-liter V-6 that’s been muscling its way between the front fenders of most any Benz that’ll have it. This frat boy makes 362 horsepower and 384 pound-feet of torque in the GLE43. It’s also under the hood of the E400 wagon—albeit with a less aggres-



## **Quantified to Satisfy**

No surprise that the wagon has the lower center of gravity (CG) and lift-over height, but its longer cargo hold means you can fit more stuff below the rear window line.



ILLUSTRATIONS BY PETE SUCHESKI







Most of the buying public apparently does not concur, but our staff unanimously agrees that the wagon is the more desirable of the above two vehicles.

sive tune and no AMG enhancements—where it pledges 33 less horsepower and 30 pound-feet less torque. In both vehicles, torque is routed to all four wheels through a nine-speed transmission.

Base prices are within 8 percent of each other, or less than the cost of their “designo” cosmetic upgrades that help drive the window stickers above \$85K. But pricing is beside the point, as the broader idea here is that Mercedes ostensibly used the same rubric in designing and engineering both machines, thus eliminating variables outside of body style. This should help us demonstrate, without any shred of bias, that wagons rule and crossovers drool.

## 2. MERCEDES-AMG GLE43 4MATIC

The first thing you notice when climbing aboard the GLE43 is its seating position. Upright doesn’t begin to describe it; the Iron Throne allows for a more relaxed posture. Switching into the GLE43 from the E400 felt so much like climbing onto the back of an elephant that we got out the tape measure. We recorded the height of the same driver’s shoulder in both vehicles with the seat bottom adjusted all the way to the floor and found that behind the wheel of the crossover, you are more than nine inches higher off the pavement than you are in the wagon. Indeed, this puts your line of sight at the wagon’s roof, such that even your vertically challenged author had no difficulty seeing over the E-class when following it.

And follow it we did, because allowing the GLE43 to lead would have held up the wagon while driving through the California canyons north of Los Angeles. There’s a reason the GLE driver’s sun visor says, “Avoid abrupt maneuvers and excessive speed.”

At 5089 pounds—646 more than the E400—the GLE43’s excess weight negates its power advantage, but not nearly as much as its towering height negates its handling. At the test track, the wagon zipped through our slalom 2.0 mph faster

**Mercedes-AMG GLE43 4MATIC**  
**[+] I Can See for Miles;**  
**The Kids Are Alright;**  
**Anyway, Anyway, Anywhere.**  
**[-] Who Are You? Mary Anne with the Shaky Hand; Substitute.**  
**[=] Won’t Get Fooled Again.**

## 2017 MERCEDES-BENZ E400 4MATIC WAGON

**\$89,065**

PRICE AS TESTED  
BASE PRICE

\$63,225

## 2017 MERCEDES-AMG GLE43 4MATIC

**\$85,875**

\$68,075

### DIMENSIONS

|                 |                            |                            |
|-----------------|----------------------------|----------------------------|
| LENGTH          | 194.2 in                   | 189.6 in                   |
| WIDTH           | 72.9 in                    | 78.7 in                    |
| HEIGHT          | 58.1 in                    | 69.3 in                    |
| WHEELBASE       | 115.7 in                   | 114.8 in                   |
| FRONT TRACK     | 62.7 in                    | 65.1 in                    |
| REAR TRACK      | 63.0 in                    | 65.9 in                    |
| INTERIOR VOLUME | F: 52 cu ft<br>R: 47 cu ft | F: 53 cu ft<br>R: 50 cu ft |
| CARGO BEHIND    | F: 64 cu ft<br>R: 35 cu ft | F: 80 cu ft<br>R: 38 cu ft |

### POWERTRAIN ENGINE

|                                                            |                                                            |
|------------------------------------------------------------|------------------------------------------------------------|
| twin-turbocharged DOHC 24-valve V-6<br>183 cu in (2996 cc) | twin-turbocharged DOHC 24-valve V-6<br>183 cu in (2996 cc) |
| POWER HP @ RPM<br>329 @ 6000                               | 362 @ 6000                                                 |
| TORQUE LB-FT @ RPM<br>354 @ 1600                           | 384 @ 2000                                                 |
| REDLINE/FUEL CUTOFF<br>6300/6400 rpm                       | 6300/6000 rpm                                              |
| LB PER HP<br>13.5                                          | 14.1                                                       |

### DRIVELINE

|                                               |                   |
|-----------------------------------------------|-------------------|
| TRANSMISSION<br>9-speed automatic             | 9-speed automatic |
| DRIVEN WHEELS<br>all                          | all               |
| GEAR RATIO:1/<br>MPH PER 1000 RPM/<br>MAX MPH |                   |
| 1 5.35/5.1/33                                 | 1 5.35/4.5/27     |
| 2 3.24/8.4/54                                 | 2 3.24/7.5/45     |
| 3 2.25/12.1/77                                | 3 2.25/10.8/65    |
| 4 1.64/16.5/106                               | 4 1.64/14.8/89    |
| 5 1.21/22.4/130                               | 5 1.21/20.1/121   |
| 6 1.00/27.1/130                               | 6 1.00/24.3/130   |
| 7 0.86/31.6/130                               | 7 0.86/28.3/130   |
| 8 0.72/37.7/130                               | 8 0.72/33.8/130   |
| 9 0.60/45.2/130                               | 9 0.60/40.5/130   |
| FINAL DRIVE RATIO:1                           | 2.82              |
|                                               | 3.47              |

### CHASSIS SUSPENSION

|                                          |                                               |
|------------------------------------------|-----------------------------------------------|
| F: multilink, air springs, anti-roll bar | F: control arms, air springs, anti-roll bar   |
| R: multilink, air springs, anti-roll bar | R: multilink, air springs, anti-roll bar      |
| F: 14.2-inch vented, cross-drilled disc  | F: 14.8-inch vented, cross-drilled disc       |
| R: 14.2-inch disc partially defeatable   | R: 13.6-inch vented disc partially defeatable |
| STABILITY CONTROL<br>Dunlop              | Continental                                   |
| TIRES<br>Sport Maxx RT2                  | CrossContact UHP                              |
| F: 245/45R-18 100Y                       | 265/40R-21 105Y                               |
| R: 275/40R-18 103Y                       |                                               |

## CAR AND DRIVER TEST RESULTS

### ACCELERATION

|                     |                                |                                |
|---------------------|--------------------------------|--------------------------------|
| 0-30 MPH            | 1.9 sec                        | 1.9 sec                        |
| 0-60 MPH            | 5.3 sec                        | 5.4 sec                        |
| 0-100 MPH           | 13.4 sec                       | 18.4 sec                       |
| 0-120 MPH           | 20.6 sec                       | 23.0 sec                       |
| 1/4-MILE @ MPH      | 13.9 sec @ 101                 | 14.1 sec @ 98                  |
| ROLLING START       |                                |                                |
| 5-60 MPH            | 6.5 sec                        | 6.5 sec                        |
| TOP GEAR, 30-50 MPH | 3.2 sec                        | 3.4 sec                        |
| TOP GEAR, 50-70 MPH | 3.7 sec                        | 4.4 sec                        |
| TOP SPEED           | 130 mph (gov ltd, mfr’s claim) | 130 mph (gov ltd, mfr’s claim) |

### CHASSIS

|                                 |           |           |
|---------------------------------|-----------|-----------|
| BRAKING, 70-0 MPH               | 160 ft    | 172 ft    |
| ROADHOLDING, 300-FT-DIA SKIDPAD | 0.85 g*   | 0.77 g*   |
| 610-FT SLALOM                   | 43.7 mph* | 41.7 mph* |

### WEIGHT

|              |           |           |
|--------------|-----------|-----------|
| CURB         | 4443 lb   | 5089 lb   |
| %FRONT/%REAR | 51.7/48.3 | 52.6/47.4 |
| CG HEIGHT    | 22.5 in   | 27.0 in   |

### FUEL

|                       |              |              |
|-----------------------|--------------|--------------|
| TANK                  | 21.1 gal     | 24.6 gal     |
| RATING                | 91 octane    | 91 octane    |
| EPA COMBINED/CITY/HWY | 21/19/25 mpg | 20/17/23 mpg |
| C/D 300-MILE TRIP     | 18 mpg       | 15 mpg       |

### SOUND LEVEL

|               |        |        |
|---------------|--------|--------|
| IDLE          | 37 dBA | 38 dBA |
| FULL THROTTLE | 71 dBA | 76 dBA |
| 70-MPH CRUISE | 64 dBA | 66 dBA |

\*Stability-control inhibited.



## FINAL RESULTS

Shell  
**V-Power  
NITRO+**  
Premium Gasoline  
The Official Fuel of  
CAR AND DRIVER

▶ **MERCEDES-BENZ E400 WAGON**  
Maximum points available

**MERCEDES-AMG GLE43**

| RANK                | 1          | 2          |
|---------------------|------------|------------|
| <b>VEHICLE</b>      |            |            |
| DRIVER COMFORT      | 10         | 9          |
| ERGONOMICS          | 10         | 8          |
| REAR-SEAT COMFORT   | 5          | 3          |
| REAR-SEAT SPACE*    | 5          | 4          |
| CARGO SPACE*        | 5          | 4          |
| FEATURES/AMENITIES* | 10         | 7          |
| FIT AND FINISH      | 10         | 9          |
| INTERIOR STYLING    | 10         | 10         |
| EXTERIOR STYLING    | 10         | 8          |
| REBATES/EXTRAS*     | 5          | 0          |
| AS-TESTED PRICE*    | 20         | 19         |
| <b>SUBTOTAL</b>     | <b>100</b> | <b>81</b>  |
| <b>POWERTRAIN</b>   |            |            |
| 1/4-MILE            |            |            |
| ACCELERATION*       | 20         | 20         |
| FLEXIBILITY*        | 5          | 2          |
| FUEL ECONOMY*       | 10         | 10         |
| ENGINE NVH          | 10         | 7          |
| TRANSMISSION        | 10         | 8          |
| <b>SUBTOTAL</b>     | <b>55</b>  | <b>47</b>  |
| <b>CHASSIS</b>      |            |            |
| PERFORMANCE*        | 20         | 20         |
| STEERING FEEL       | 10         | 8          |
| BRAKE FEEL          | 10         | 7          |
| HANDLING            | 10         | 9          |
| RIDE                | 10         | 10         |
| <b>SUBTOTAL</b>     | <b>60</b>  | <b>54</b>  |
| <b>EXPERIENCE</b>   |            |            |
| FUN TO DRIVE        | 25         | 20         |
| <b>TOTAL</b>        | <b>240</b> | <b>202</b> |

than the GLE43, which felt even more disadvantaged out on the road. As reviews editor Josh Jacquot put it, “You can drive this thing fast because it has plenty of grip, but it’s never fun.”

The suspension in the GLE43 is partially to blame for the joy deficit; even in our preferred Comfort mode, it is too stiff, a byproduct of the AMG treatment that demands sporty-ing up the dampers. In this case, it caused lots of head toss and, at times, threatened to bounce the SUV right off the road. While it would have been more comfortable traveling off-road than the wagon was—and the GLE43’s superior ground clearance and giant wheels did help us navigate the sometimes-pockmarked single-lane desert roads without flattening a tire as happened to the E400—these advantages are hardly the sort that we find compelling.

### 1. MERCEDES-BENZ E400 4MATIC WAGON

So yeah, the wagon drives better, traffic in Los Angeles sucks, and women and persons of color are underrepresented in *Rolling Stone*’s “500 Greatest Albums of All Time.” Surprise! When we measured the E400’s center of gravity, we found it 4.5 inches lower than that of the GLE43. But that’s not the entire story, as the narrower wagon is also nimbler, turning in quicker and rotating more easily. Its suspension is softer even in Sport mode (this is by design, as it’s not an AMG model), which not only improves the ride but also provides feedback that helps its driver better pinpoint the wagon’s limits for more confident driving.

That svelte 72.9-inch width also gives the

Would you give up the superior handling, ride quality, fuel economy, and braking performance of the wagon just to sit 9.1 inches higher in the SUV?

**Mercedes-Benz E400 4MATIC Wagon**  
[+] Bell Boy, Amazing Journey, Pure and Easy.  
[-] Young Man Blues, Squeeze Box, I Can’t Explain.  
[=] Love, Reign o’er Me.

E400 great proportions. While we don’t go for beauty contests, we would be remiss in not pointing out that even though the wagon and the crossover have the same character lines, they just work better on the longer, lower car.

The wagon’s slenderness carries a cost, though. The back seat of the E400, while quite comfortable for two, cannot compare with the roomier GLE43’s. Families with two or more kids will feel the pinch in the wagon, probably quite literally. Putting them in the tiny, rear-facing third row won’t solve the problem—and it seems like the kind of thing that, in today’s parenting climate, might result in a visit from child protective services.

Cargo space swings the other way, however, as the luggage area in the E400 is 5.5 inches deeper and 2.5 inches wider than in the GLE43. Although the E400’s cargo cover is an inch closer to the load floor than in the GLE43, there’s more room for stuff in the wagon because the wheel wells intrude less and the space is oriented more horizontally so you can load more without impeding rearward visibility.

The wagon is also quicker, gets better fuel economy, and stops shorter. It is the all-around better vehicle. Perhaps the only serious criticism we can levy against the E400 is that there’s no real base version. Its \$63,225 starting price is over \$10,000 more than the least-expensive GLE, which certainly doesn’t help make the wagon attractive to young families. But that’s a function of the market, which is crazy for crossovers. Or maybe just crazy, period.

\*These objective scores are calculated from the vehicle’s dimensions, capacities, rebates and extras, and/or test results.



# BMW & MINI parts



- Free shipping over \$150 (most orders)
- Free DIY video guides
- Free color catalog



BMW since 1974. MINI since 2002.

800.535.2002 | BAVauto.com

## 2017 FALL BENEFIT RAFFLE ENTER TODAY – Win this week!

WIN \$500 IN ANY OF 22 BONUS DRAWINGS

**Grand Prize Drawing – Nov 16, 2017 @ 2pm**

Grand Prize Winner • Chevrolet Corvette Grand Sport LT-1 Convertible  
has a choice of 2017: • Porsche 718 Boxster S • Alfa Romeo 4c Spider • \$50,000 CASH!

### CONVERTIBLE EDITION!



**\$100 PER TICKET**  
Only 1500 tickets available  
**Enter Early!**

Bonus drawings are every Tuesday and Thursday at 2:00pm EST beginning August 24 through November 7, 2017. To qualify, you must enter by 1pm EST the day of the drawing.

**Bonus winners receive \$500!**

**Grand Prize Drawing**  
**2pm EST Nov 16, 2017**

### Easy to Enter:

- **ONLINE:** Make a secure ticket purchase at [www.laddinc.org](http://www.laddinc.org)
- **CALL TOLL FREE:** 1-877-861-5233 Monday through Friday, 8:00am to 5:00pm EST
- **BY MAIL:** Download an official entry form at [www.laddinc.org](http://www.laddinc.org) and mail to LADD



**ladd**  
Living Arrangements for  
the Developmentally Disabled

All ticket purchases benefit the people served by Living Arrangements for the Developmentally Disabled (LADD). Founded in 1975, LADD is a designated 501(c)(3) by the IRS. The Grand Prize drawing is observed by a representative from the auditing firm of Barnes, Dennig & Co., Ltd. Raffle Rules at: [www.laddinc.org/benefit-car-affle](http://www.laddinc.org/benefit-car-affle)

Contact us: LADD, Inc. • 3603 Victory Parkway • Cincinnati, OH 45229 Phone: 513.487.3955 • Email: [raffle@laddinc.org](mailto:raffle@laddinc.org)

• LADDinc  
• @LADD\_Inc

According to the Internal Revenue Code the amount paid for chances to participate in a raffle does not qualify as a charitable contribution.

BUILT  
NOT  
BOUGHT®

FACTORY FIVE



Free brochure/DVD  
Factory Five Racing  
Wareham, MA  
[www.factoryfive.com](http://www.factoryfive.com)  
508-291-3443



# Don't Call It a Wagon

**Porsche's Panamera Sport Turismo is the embodiment of speed, style, and practicality.**

**\_by Eric Tingwall**

**T**he first rule of modern wagon marketing: Do not talk about wagons. You sell an Outback, an All-road, or a TourX because it's easier to sell surf culture, canine companionship, and boundless adventure than the ability to shove two extra suitcases in the back. In naming its new long-roof Panamera, Porsche abided by this unspoken industry protocol. The ambiguous Sport Turismo moniker says nothing of the car's longer roof and larger cargo hold but speaks to its emotive payoff: looking fast and moving swiftly. A near clone of the 2012 Paris auto-show concept car, the Sport Turismo is low slung and beautifully sculpted, and after hustling both Turbo and plug-in E-Hybrid versions over Vancouver Island logging roads, we can confidently declare that the Panamera Sport Turismo is the 928 of wagons. Because calling it the 911 of wagons would be glib.

The conversion from Panamera to Panamera Sport Turismo involves a new roof and new sheetmetal from the B-pillars back, plus a standard three-position, roof-mounted active rear spoiler that extends to its maximum height to reduce wind noise when the panoramic sunroof is open. Stretching the Panamera's canopy rearward, the beefy D-pillars accentuate the car's steroidal rear haunches; the more upright rear glass also conjures the Macan compact SUV.

With no change in its overall length, Porsche's long-roof four-door is only moderately more practical than the regular Panamera hatchback. The cargo hold in nonhybrid models measures 18 cubic feet with the rear seats up, a mere 4 percent increase over that of the standard model. With the rear seats folded, the cargo area grows to 49 cubes, a number topped by both the Macan and the Cayenne



**[+] The antithesis of the stereotypical wagon. [-] Only marginally more practical than the regular Panamera hatch.**

(53 and 60 cubic feet, respectively). The Sport Turismo's space is at least easy to load, thanks to an expanded hatch opening plus a lift-over height that is 5.6 inches lower than the conventional Panamera's and almost flush with the cargo floor.

But the real benefit in choosing the Sport Turismo over the regular Panamera is felt in the rear seat. In the standard car, six-footers brush their crowns where the headliner curves down into the hatch. The Sport Turismo's longer roof pushes that transition back far enough to eliminate any interference. Rear legroom remains a bit tight, especially when compared with a







## 2018 Porsche Panamera Sport Turismo

**VEHICLE TYPE:** front-engine, all-wheel-drive, 4- or 5-passenger, 4-door hatchback

**BASE PRICE:** \$97,250–\$155,050

**ENGINES:** turbocharged and intercooled DOHC 24-valve 3.0-liter V-6, 330 hp, 331 lb-ft; twin-turbocharged and intercooled DOHC 24-valve 2.9-liter V-6, 440 hp, 405 lb-ft; twin-turbocharged and intercooled DOHC 32-valve 4.0-liter V-8, 550 hp, 567 lb-ft; twin-turbocharged and intercooled DOHC 24-valve 2.9-liter V-6, 330 hp, 331 lb-ft + permanent-magnet synchronous AC motor, 136 hp, 295 lb-ft, combined output, 462 hp, 516 lb-ft; 14.0-kWh lithium-ion battery pack

**TRANSMISSION:** 8-speed dual-clutch automatic with manual shifting mode

### DIMENSIONS

**WHEELBASE:** 116.1 in

**LENGTH:** 198.8 in

**WIDTH:** 76.3 in

**HEIGHT:** 56.2–56.4 in

**CARGO VOLUME:**

15–18 cu ft

**CURB WEIGHT:**

4200–4900 lb

**PERFORMANCE (C/D EST)**

**ZERO TO 60 MPH:**

3.0–4.8 sec

**ZERO TO 100 MPH:**

7.5–11.2 sec

**1/4-MILE:** 11.3–13.0 sec

**TOP SPEED:**

160–188 mph

**FUEL ECONOMY**

**EPA COMBINED/CITY/HWY:** 21–24/18–21/

25–28 mpg (gas models, C/D est)

**EPA COMBINED:**

48/24 MPGe (plug-in hybrid, battery charged/depleted, C/D est)

BMW 7-series or a Mercedes-Benz S-class, as the Sport Turismo is not offered in the long-wheelbase Executive variant that adds 5.9 inches of length to the regular Panamera. A new five-seat configuration, which Porsche tellingly calls a 4+1, is standard, while the four-seat setup that is the only arrangement offered in the conventional Panamera is optional in the wagon.

When U.S. deliveries begin in November, the Sport Turismo line will bypass the entry-level rear-wheel-drive version offered on the standard car and will route torque exclusively to all four wheels. The range starts with the \$97,250 Panamera 4 Sport Turismo, which delivers 330 horsepower from a single-turbo 3.0-liter V-6. Another \$13,000 buys the 440-hp twin-turbo 2.9-liter V-6 of the 4S Sport Turismo. Our drive gave us seat time in the \$105,050 Panamera 4 E-Hybrid variant (a plug-in vehicle with a 14.0-kWh lithium-ion battery) and the \$155,050 Turbo with its twin-turbo 4.0-liter V-8 making 550 horsepower.

As in the standard Panamera, the Sport Turismo's chassis dynamics are indifferent to the powertrain installed. Both versions we drove delivered perfectly weighted steering, nicely controlled body motions, and a firm ride that never turns flinty, choppy, or abrupt. Our sole complaint concerns the E-Hybrid, whose braking force is challenging to modulate, offering a vague transition between regenerative braking and the conventional friction pads. The E-Hybrid accelerates more fluidly than it stops, with the 136-hp motor and the 2.9-liter V-6 seamlessly stirring together a combined output of 462 horsepower. While the E-Hybrid doesn't yet have an official EPA rating, we expect each battery charge to be good for about 20 miles of electric range. In both E-Hybrid and Turbo forms,



The Sport Turismo isn't particularly practical compared with other wagons, but it's certainly attractive compared with other Panameras.

a Porsche-exclusive eight-speed dual-clutch automatic transmission grabs gears assertively and engages smoothly from a stop. It's the berserker Turbo model that we'd buy, though. Its engine creates instant thrust with relentless top-end pull, and that's before you engage the space-time bending launch-control sequence. We expect the Turbo Sport Turismo to match the 3.0-second zero-to-60-mph blitz we recently measured on a standard-body Panamera Turbo despite the former being about 120 pounds heavier. Those who demand more will need to wait for the elaborately named Porsche Panamera Turbo S E-Hybrid. While Porsche hasn't officially confirmed this powertrain in the Sport Turismo body style, the brand that offers 22 variants of the 911 isn't likely to resist yet another Panamera permutation. When it does arrive, the Turbo S E-Hybrid will blend the E-Hybrid's electrified bits with the Turbo's heady V-8 for a combined output of 680 horses.

With wagonlike practicality, perfect two-box proportions, and Porsche dynamics, the Panamera Sport Turismo exists in a niche of a niche that also happens to be an untapped and possibly rich vein. The company can call the long-roof Panamera whatever it wants. If a Porsche is going to wear four doors, it's hard to dream up a better one than the Sport Turismo. ■





2018  
**Q50**

# YOU ARE YOUR ONLY LIMIT.

Take your drive to the next level. The power of a 400-horsepower engine.  
The precision of Direct Adaptive Steering.\* The confidence you need  
to command the road. The 2018 INFINITI Q50 Red Sport 400.



**INFINITI**

EMPOWER THE DRIVE™

\*Available feature: Direct Adaptive Steering.® See owner's manual for details.  
©2017 INFINITI.

**Long-Term Test:** When the tires get worn and the factory warranty runs out, that's where we come in. *Car and Driver* is your source for the 40,000-mile evaluation.

# 2016 MAZDA MX-5 MIATA CLUB

**Arrival: Oct/2015**  
**Departure: May/2017**

Have we told you about our little guy? He's gifted, you know. —by Daniel Pund

**L**ust, admiration, appreciation, familiarity, pity, longing, nostalgia, resignation, fear. Mazda Miatas (okay, MX-5 Miatas) have been a part of our lives for so long that, at one time or another, we've felt nearly every way about the world's most familiar roadster.

But we would never say that we felt nurturing of a Miata. Or protective. At least we didn't until we took delivery of a 2016 MX-5 Miata Club. Maybe it's the size of the thing—trim and light and infused with a youthful vigor—that pulled out of us the parental instinct. We suppose that the Camaro SS, which we had in the long-term fleet at the same time, also brought out that part of us. But in that case, it was more like being the parents of a teenager with wayward tendencies. The Miata seemed a little more vulnerable, the one that was more likely to get hurt than to hurt others, thanks perhaps to the profusion of SUVs and trucks on our roads.

## Rants & Raves

The Miata is the only modern car to make 70 mph feel fast. I love that. —Eric Tingwall

This car is 21 years newer than my '95 Miata, and it earns a drink for preserving its predecessor's magic. —Alexander Stoklosa

This despite the best efforts of Mazda's designers, who decided it was finally time to let go of the retro adorability that has been the car's hallmark since 1989. The newest Miata still shares the general layout and seating capacity of the old British roadsters that inspired the first one. But where there once were wide-eyed hopeful peepers reminiscent of Bugeye Sprites, there are now fierce little eyes glowering under a low, angry brow. The new car is to old Miatas what the Gremlin is to the Mogwai. And unlike the happy primary colors of the earliest Miatas, this car is offered in white, off-white, gray, and black. Yes, a red is available (for an extra \$300) and also a blue on the best-equipped models, but even these colors are moody, as if always reflecting overcast skies.

We chose Ceramic Metallic, a no-cost light gray/dingy white that looks as if it would always be cool to the touch. Combined with dark wheels, our long-termer looked about as sinister as a Miata is ever going to. And though it shares its 155-hp 2.0-liter four-cylinder with every other new Miata sold in the United States, our model is probably the best-performing version available. The mid-level Club, which started at \$29,420 for 2016, comes with a clutch-type limited-slip differential, a strut-tower brace, and a sportier-than-stock suspension tune that includes Bilstein dampers. Well, Club models come with that equipment provided you order yours with the six-speed manual transmission. You know you should do that, right? The Club also rides on 17-inch dark-painted wheels wearing 205/45R-17 Bridgestone Potenza S001 summer tires.

We specified only two options: The \$3400 Brembo/BBS package, which you'll be shocked to learn brings Brembo front brakes with red-painted calipers and 17-inch BBS wheels in the same dark finish as the standard Club wheels. That package also includes side-sill and rear-apron extensions along with keyless entry. We like the BBS design, and Mazda says each wheel is two pounds lighter than the standard





A white Mazda Miata is driving on a winding asphalt road that curves to the right. The road is flanked by dense green trees and foliage. The car is in the center of the frame, moving towards the viewer. The background is blurred, suggesting motion. The car's headlights are on, and the driver is visible through the windshield.

**"THIS LATEST MIATA DELIVERS DRIVING JOY  
IN THE UPPER ECHELON OF CARS. THAT IT DOES  
SO FOR \$30K IS ASTONISHING."**

—DAVE VANDERWERP, DEPUTY ONLINE EDITOR





Club unit. The Brembos promise greater fade resistance, and we found none in repeated full-force stops from 70 mph. We also threw in all-season floor mats for \$90 because, like all our long-termers, the Miata would suffer through Michigan's winter, two of them in this case. The total cost came to \$32,910.

It's really the things that come standard on all Miatas, though, that define it. That short-throw shifter, which was a revelation more than 20 years ago, remains a joy to use. Despite a switch to electric power assist, the steering is plenty talkative, if not in comparison with earlier Miatas then at least in comparison with other current cars. The softtop still drops with a wrist toss and can be raised easily with the same arm almost as quickly with only a single shoulder rotation. The car feels balanced and natural in corners with an easy give-and-take of forces and responses. The clutch pedal, shifter, and throttle pedal work together so seamlessly that you sort of forget that they are separate systems. The Miata remains the jet trainer of the sports-car world. Fat, gummy tires and stonking power don't deliver this sort of driving joy, despite what some makers of sporty cars seem to believe. It's about usable performance. It's about flirting with the limits without necessarily flirting with disaster. In a Miata, old or new, the sensation of speed is greater than the actual speed. It's the inverse of many hyperstable autobahn stormers, which are capable of tremendous stability and are quiet at hideous speeds but at the expense of the experience of speed.

The Miata is not slow, however. Our test numbers were impressive. It made it to 60 mph in 5.8 seconds at the beginning of our



loan and added only a tenth of a second at the end. It posted quarter-mile times, beginning and end, of 14.6 seconds. Yes, we hear you: A Honda Civic Type R will crush those times. And that's true. It's also true that not all that long ago, a 14-second quarter-mile was a Mustang GT time. Seventy-to-zero-mph braking performance was excellent: 158 feet at the beginning and 162 feet at the end. And the Miata posted 0.88 g on the skidpad at both tests.

It's telling that in 40,000 miles, not one staffer complained about the level of power. Nor did anyone complain about any other performance aspect of the car. Well, one person whined that the steering effort was too light. A couple of staffers complained about the body roll in the corners, implying that the car was too soft. But the rest of us registered it as feedback, smoothly raising the alarm about an impending loss of traction. We do acknowledge that its body lean is slightly inconsistent with its new, modern visage.

The gripes we did register were fairly predictable for a car so obsessively focused on its fun-to-drive character. The thing is loud, especially on the

#### Rants & Raves

This gearbox is perfect. It takes a lot of effort to flub a downshift.  
—Rusty Blackwell

The bulge for the catalytic converter protrudes into the passenger footwell worse than a '90s Camaro's.  
—Tony Quiroga

At highway speeds, it's so loud that dropping the top makes it seem quieter.  
—Steve Siler

Everything I would ask for—a telescoping steering wheel and more sound deadening for long trips—would only add weight, so I'm not going to ask for them.  
—Aaron Robinson

## Service Timeline:

All of the sports-car fun, none of the sports-car funds.

Key: ● - Repairs ● - Damage ● - Maintenance  
● - Normal Wear ● - Oil Additions

**October 12, 2015**  
508 miles: MX-5 Miata Club begins its long-term test.

**November 18, 2015**  
2265 miles: We fit Bridgestone Blizzak LM-60 winter tires.

**December 7, 2015**  
2589 miles: We refit the Bridgestone Potenza

S001 summer tires for initial testing.

**December 28, 2015**  
2996 miles: With initial testing completed, we refit the winter tires.

**February 20, 2016**  
5431 miles: Already tired of winter, the MX-5 heads to Southern California.

**February 23, 2016**  
7800 miles: Upon the car's arrival in the Golden State, we refit the summer tires.

**March 24, 2016**  
10,300 miles: Dealer performs oil change and inspections, including rebalancing the tires to address a vibration issue, \$207

**July 3, 2016**  
13,273 miles: We replace the right taillight after it was punched out by a Los Angeles hooligan, \$269

**July 12, 2016**  
14,267 miles: The MX-5 begins its journey back to C/D headquarters.

**July 18, 2016**  
16,735 miles: The MX-5 returns home.

**August 1, 2016**  
18,288 miles: We repair damage to the front fender and bumper covers sustained while in California, \$2353

**August 25, 2016**  
20,344 miles: Dealer performs oil change and inspections, and investigates a check-engine light; a faulty mass airflow sensor is the culprit. Dealer replaces sensor at no cost under warranty, \$95







expressway. Really loud. It makes 90 decibels of racket at wide-open throttle and 80 decibels at a steady 70-mph cruise. Unfortunately, this is not the blare of a wound-up Ferrari engine. There is a lot of wind noise. A lot of road noise. We take our sound-level readings with the top up and found that dropping the top brought some auditory relief by smothering the din with wind rush. It's like turning up white noise to drown out a nearby leaf blower.

Also, the Miata is—wait for it—small. Not everyone fits. We recommend you try one on for size before committing. When driving the Miata, our largest human looked like a circus bear riding a bicycle. Surely Mazda could have added more sound-deadening materials to the thing. The company could have spec'd a thicker sound-absorbing top. It could have done much to isolate the driver from the noisy bits of the car and from the outside world, but that would have added weight. And because the company didn't do those

It's a tight fit for large humans, but the MX-5 Miata's handsome interior is home to some of the auto world's best-matched primary controls.

things, it brought the car down to an impressively low 2324 pounds.

What we just did in the above paragraph is what most of our staffers did in the Miata's logbook over the 20 months the car was in our care: Bring up an annoyance (no heated seats or telescoping steering wheel, for example) and then immediately forgive the shortcoming since, most of the time, curing the issue would involve adding weight or complexity that would detract from the core of what a Miata is. Suffice it to say that, while the Miata will deliver a truly excellent 32 mpg in mixed driving, it's not designed to be a commuter car. To use one as such, especially through the winter, will highlight a few things that might be considered faults in, say, a Honda Civic.

**November 21, 2016**  
27,401 miles: We refit the winter tires.

**November 31, 2016**  
28,810 miles: Dealer performs oil change and inspections, \$74

**March 8, 2017**  
34,175 miles: Dealer performs oil change and inspections, \$88

**April 17, 2017**  
36,849 miles: We refit the summer tires.

**May 12, 2017**  
40,000 miles: Long-term test ends.

#### OPERATING COSTS (FOR 40,000 MILES)

|                                      |        |
|--------------------------------------|--------|
| MAINTENANCE .....                    | \$464  |
| NORMAL WEAR .....                    | \$808  |
| REPAIR .....                         | \$0    |
| DAMAGE AND DESTRUCTION .....         | \$2622 |
| GASOLINE (@ \$2.62 PER GALLON) ..... | \$3275 |

#### SERVICE

|                                           |      |
|-------------------------------------------|------|
| DEALER VISITS (SCHEDULED/UNSCHEDULED) ... | 4/0  |
| DAYS OUT OF SERVICE .....                 | 4    |
| UNSCHEDULED OIL ADDITIONS .....           | 0 qt |







During the coldest parts of winter, the Miata developed a rough idle and the top mechanism squeaked in about 10 different places. And since the top was always up in the winter, the car was loud.

But as a measure of our protectiveness toward the Miata, we sought to make excuses for its foibles as an everyday transportation pod. Instead of "This car sucks in the winter," one staffer wrote, "This poor car does not deserve a Michigan winter."

### Rants & Raves

Feels nicely upscale in the modern Mazda way.  
—Mike Sutton

Any more highway trips and I'm investing in hearing protection.  
—Carolyn Pavia-Rauchman

Is it too late to do a 100,000-mile test of this car?  
—Rusty Blackwell

Such an easy clutch and shifter. If every 16-year-old learned to drive in a stick-shift Miata, the world would be a better place.  
—Joseph Capparella



Because he is blessed with the gift of hearing, the driver of our Miata in the photo above wishes he could lower the top and mask the racket with wind rush.

When the Miata visited California, an L.A.-area miscreant kicked out one of its taillights for no apparent reason. The log-book writer went on a furious rant, referring to the perp as a "f\*\*\*\*g s\*\*\*\*g" and questioning his own faith in humanity. And after L.A.'s park-by-touch morons damaged both the front and rear fascias, we felt we should bring the car back to our Michigan home where we would fix it and protect it from such callousness. The Miata was clearly going to have to fail spectacularly for us to give it a negative review and . . . it did not.

In fact, nothing of consequence failed on the thing, at least not of its own accord. We replaced a mass airflow sensor at 20,344 miles under warranty. And on several occasions, we had to reset the tire-pressure-monitoring system (an easy push of a button) when we got erroneous warnings, usually on especially cold days. And, well, that was it. Otherwise, the car ran and drove faultlessly, within the context of its mission. You see, our little guy has heart and personality. And what he does well, he does spectacularly well. So what if he talks loudly?



## 2016 MAZDA MX-5 MIATA CLUB

PRICE AS TESTED ..... **\$32,910**  
BASE PRICE ..... **\$29,420**

**VEHICLE TYPE:** front-engine, rear-wheel-drive, 2-passenger, 2-door convertible  
**ENGINE TYPE:** DOHC 16-valve Atkinson-capable inline-4, aluminum block and head, direct fuel injection  
**DISPLACEMENT** ..... 122 cu in, 1998 cc  
**POWER** ..... 155 hp @ 6000 rpm  
**TORQUE** ..... 148 lb-ft @ 4600 rpm  
**TRANSMISSION** ..... 6-speed manual  
**WHEELBASE** ..... 90.9 in  
**LENGTH** ..... 154.1 in  
**WIDTH** ..... 68.3 in  
**HEIGHT** ..... 48.8 in  
**CURB WEIGHT** ..... 2324 lb

### WARRANTY

3 years/36,000 miles bumper to bumper  
5 years/60,000 miles powertrain  
5 years/unlimited miles corrosion protection  
3 years/36,000 miles roadside assistance

### MODEL-YEAR CHANGES

**2017:** Blind Spot Monitoring and Rear Cross Traffic Alert are standard on Club trim. The power-folding hardtop MX-5 Miata RF joins the lineup.

## CAR AND DRIVER TEST RESULTS

### PERFORMANCE

**ZERO TO 60 MPH:**  
NEW ..... 5.8 sec  
40,000 ..... 5.9 sec  
**ZERO TO 100 MPH:**  
NEW ..... 17.3 sec  
40,000 ..... 16.2 sec  
**ZERO TO 120 MPH:**  
NEW ..... 29.5 sec  
40,000 ..... 29.5 sec  
**ROLLING START, 5-60 MPH:**  
NEW ..... 6.5 sec  
40,000 ..... 6.4 sec  
**1/4-MILE:**  
NEW ..... 14.6 sec @ 94 mph  
40,000 ..... 14.6 sec @ 95 mph  
**BRAKING, 70-0 MPH:**  
NEW ..... 158 ft  
40,000 ..... 162 ft  
**ROADHOLDING, 300-FT-DIA SKIDPAD:**  
NEW ..... 0.88 g  
40,000 ..... 0.88 g  
**TOP SPEED (DRAG LIMITED)** ..... 132 mph  
**EPA FUEL ECONOMY, COMBINED/CITY/HWY** ..... 30/27/34 mpg  
**C/D-OBSERVED FUEL ECONOMY** ..... 32 mpg

### LIFE EXPECTANCIES

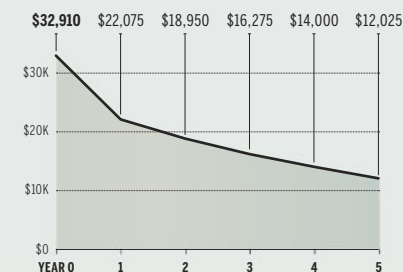
(ESTIMATED FROM 40,000-MILE TEST)  
**TIRES** ..... 35,000 miles  
**FRONT BRAKE PADS** ..... 95,000 miles  
**REAR BRAKE PADS** ..... 55,000 miles

### WHAT BITS AND PIECES COST

**HEADLAMP** ..... \$1111  
**ENGINE AIR FILTER** ..... \$20  
**OIL FILTER** ..... \$8  
**WHEEL** ..... \$961  
**TIRE** ..... \$202  
**WIPER BLADES (PAIR)** ..... \$41  
**FRONT BRAKE PADS** ..... \$279

## FIVE-YEAR DEPRECIATION

Depreciation data from ALG. Based on 15,000 miles per year.







✓Yes



✓Yes



xNo



✓Yes



Complete Timing Belt Kits!

✓Yes



✓Yes

- ✓ Reliably Low Prices
  - ✓ Easy To Use Website
  - ✓ Huge Selection
  - ✓ Fast Shipping
- [www.rockauto.com](http://www.rockauto.com)



JOIN CAR AND DRIVER AT M1 CONCOURSE FOR

# CARS AND COFFEE

SATURDAY 8:00-11:00 AM

September 23

164 South Blvd West | Pontiac, MI

Visit [M1Concourse.com](http://M1Concourse.com) for the latest Cars and Coffee news & schedule.

**M1**CONCOURSE

## YOU LITERALLY WON'T HAVE TO LIFT A FINGER



With the press of a button, you can restore your car's original paint. Our online videos will show you how to tackle most repairs in a single afternoon.



Paint pens >>> ½ oz & 2 oz bottles  
12 oz spray cans >>> Ready-to-spray pints, quarts and gallons

**AUTOMOTIVETOUCHUP.COM**  
**888-710-5192**



## Fleet Files:

Here's how our other long-term vehicles are faring in their 40,000-mile trials:



▲ *Newcomer*

## 2017 FORD MUSTANG SHELBY GT350

**Arrival: May/2017**

**Miles: 5581 Observed mpg: 17**

THE RECENT DEPARTURES of our long-term Ford Mustang GT and Chevrolet Camaro SS left a void in our pony-car stable. To fill it, we wrangled a back-to-back 10Best champion and Blue Oval thoroughbred, the Ford Mustang Shelby GT350. Its precision handling, powerful brakes, and wild 8250-rpm redline have left us awestruck since its 2015 launch.

A few of us here lobbied for the pricier R variant, wondering how those carbon-fiber wheels would hold up. But our commutes often traverse roads comparable to the surface of Mars, and the replacement cost of one of those wheels (\$4053 for a front, \$3433 for a rear) made us cringe. We settled on the \$57,045 entry-level factory hot rod. Driving the price to \$60,520 were the \$3000 Electronics package and the \$475 white over-the-top stripes.

The flat-plane-crank V-8 sent the GT350 to 60 mph in 4.2 seconds, and the car circled the skidpad with 1.02 g's of lateral grip. Those numbers aren't as mind-blowing as the exhaust note's ability to stop bystanders—and apparently critters—dead in their tracks. Ricky Raccoon took an extra-long look at the Shelby's front bumper, setting it up for an extra-long trip to the body shop that's sure to leave us with a substantial bill. RIP, Ricky. —David Beard

### 2017 BMW M2

*Arrival: Jan/2017*

*Miles: 14,307*

*Observed mpg: 23*

It's hard not to think about sport bikes when driving the M2. Its fast-twitch agility makes it feel as if it's perched on a four-wheeled branch of that family tree. It's also hard not to think about our long-term GT350, at left, as the two make for an unexpectedly close matchup. After the M2's defective differential forced a false start, we made the pilgrimage to the test track, where the M2 turned in numbers resembling the Mustang's: zero to 60 mph in 4.1 seconds, 1.00 g on the skidpad, and a stop from 70 mph in 152 feet—one foot shorter than the Shelby. Even the 297-pound weight difference is smaller than you might expect. We could argue until we're Long Beach (or is it Grabber?) Blue in the face about which one we like more, but nobody's arguing over which M car is our favorite new BMW: the M2.

—Jared Gall



### 2016 Mazda CX-9 Signature

*Arrival: Nov/2016*

*Miles: 22,601*

*Observed mpg: 22*

What you notice first about the CX-9 is . . . nothing. As in silence, the sort that causes you to glance at the tachometer when at a red light to see if the engine has stopped. Clearly, Mazda has gotten the message that its every-gram strategy needs to allow at least a few of those grams to be spent on sound deadening. Carrying on conversations with back-seat riders, at 75 mph, requires few raised voices. The 2.5-liter engine is one of the smoothest-idling four-cylinders on the market, though the turbo occasionally makes itself known a little too freely if you happen to be light on the throttle in a lower-than-necessary gear and suddenly ask for moderate power. But looking through the CX-9's logbook for further complaints, we're coming up with . . . nothing.

—John Phillips

### 2017 Chrysler Pacifica Touring-L Plus

*Arrival: Jan/2017*

*Miles: 24,274*

*Observed mpg: 23*

Sure, the latest Chrysler minivan is practical, fuel efficient, and even resists stereotypes by not being aloof in matters dynamic and aesthetic. But the topic of most interest among potential buyers seems to be reliability. Swiftly cresting the halfway point of our loan, the Pacifica is perpetually active, in demand for trips near and far. It's skilled at hauling cargo both sentient and otherwise, deftly adapting to changing internal conditions with its fold-into-the-floor seats. And it's been dead reliable, pausing only for routine service. Two issues: A plastic clip broke the first time we removed the panel that conceals the spare tire; and sometimes after a remote start, the temperature sets itself to its lowest setting, foiling attempts to pre-warm the cabin.

—Dave VanderWerp



2017 PORSCHE 718 BOXSTER S  
8,866 MILES

2017 FORD F-150 RAPTOR SUPERCREW  
10,835 MILES

2017 JAGUAR XE 35t R-SPORT AWD  
25,380 MILES

2016 NISSAN TITAN XD PRO-4X DIESEL  
36,248 MILES





# **TIRE RACK**<sup>®</sup> .com

## **GET YOUR TIRES RIGHT.**

**Find. Deliver. Install. *Smarter.*<sup>®</sup>**

### **Try Our New TIRE DECISION GUIDE**

**Not sure what tires are right for you?**

Our new and improved Tire Decision Guide eliminates any guesswork on your part. Answer a few easy questions and you'll get our top recommendations based on your preferences, our consumer survey results, our test results and more!

[www.tirerack.com/tdg](http://www.tirerack.com/tdg)

### **SUPER-FAST SHIPPING**

Ship to your home, office, or installer.  
Get shipping quotes online or by phone.





# EXCLUSIVE OFFER! GET READY GET \$80

\*Up to an \$80 Tire Rack  
Prepaid Mastercard®



Buy a set of four (4) select winter tires and get up to an \$80 Tire Rack Prepaid Mastercard by mail.

Offer valid on in-stock tires purchased from  
**AUGUST 14 – SEPTEMBER 25, 2017.**



**\$80**

Tire Rack Prepaid Mastercard when you buy a set of four (4) select winter tires from:



**\$60**

Tire Rack Prepaid Mastercard when you buy a set of four (4) select winter tires from:



For complete offer details, visit [www.tirerack.com/specials](http://www.tirerack.com/specials)

## Tire Rack Prepaid Mastercard Fulfillment and Privacy Policy

Prepaid card is given to you as a reward, refund or rebate and no money has been paid by you for the card. Prepaid card is issued by MetaBank®, Member FDIC, pursuant to license by Mastercard International Incorporated. Mastercard is a registered trademark, and the circles design is a trademark of Mastercard International Incorporated. No cash access or recurring payments. Card valid for up to 6 months; unused funds will be forfeited at midnight EST the last day of the month of the valid thru date. Card terms and conditions apply, see [MyPrepaidCenter.com/site/Mastercard-promo](http://MyPrepaidCenter.com/site/Mastercard-promo).

Hawk Incentives, a Blackhawk Network business shall use customer information as provided by Tire Rack only to the extent necessary to provide prepaid card fulfillment and supporting services on Tire Rack's behalf and shall not use such customer information for any other purpose, including, without limitation, the marketing of products or services to such customers.



## Bolt-On Convenience

Winter Tire & Wheel Packages make changing to winter tires easy and efficient. Package includes four (4) tires and four (4) wheels, mounted and balanced, ready to bolt on your vehicle. Build one at [www.tirerack.com/snow](http://www.tirerack.com/snow)



# THE RIGHT TIRE AT THE RIGHT PRICE

## OVER 500 MODELS FROM 21 MANUFACTURERS

BFGoodrich BRIDGESTONE Continental *Dick CEPEK* DUNLOP Firestone FALKEN  
FUZION GENERAL TIRE GOODYEAR HANKOOK Hoosier KUMHO TIRE MICHELIN  
PIRELLI RIKEN SUMITOMO TOYO TIRES UNIROYAL VEDESTEIN YOKOHAMA

## TIRE REBATES AND SPECIAL OFFERS

Below are a few of the special offers available this month. See them all at [www.tirerack.com/specials](http://www.tirerack.com/specials)  
To find out about special offers in the future, sign up for our emails at [www.tirerack.com/email](http://www.tirerack.com/email)

**BRIDGESTONE**

**SCORE**  
**\$70**

GET A \$70 PREPAID CARD WHEN YOU BUY 4 ELIGIBLE BRIDGESTONE TIRES.

OFFER VALID 8/10/17-10/8/17

**2017 GREAT HIT REBATE**

GET UP TO **\$100**

VIA MAIL-IN REBATE WHEN YOU PURCHASE A SET OF FOUR SELECT HANKOOK TIRES.

OFFER VALID 8/1/17 - 9/30/17

**Hankook**  
driving emotion

**KUMHO TIRE**

**MOM TAXI**  
**\$70**  
UP TO **REBATE**

on select Kumho tires  
Valid 9/1/17 - 10/31/17

## EXCLUSIVE TEST RESULTS FROM OUR ON-SITE TEST TRACK

Tire Rack's team of over 100 test drivers evaluates tires from every major manufacturer. This behind-the-wheel experience allows our sales team to provide expert product recommendations based on how, where and what you drive.



[www.tirerack.com/tires/test](http://www.tirerack.com/tires/test)



# **SUMITOMO TIRES**

**NEW**

## **ENCOUNTER AT** On-/Off-Road All-Terrain

Developed for drivers of pickups, crossovers and SUVs who want go-anywhere durability combined with confident all-season traction, even in snow.

- **Stepped Edges**  
on the tread blocks provide added bite in loose terrain.



- **Connecting Ribs**  
improve stability in the open shoulder design.



## **ENCOUNTER HT** Highway All-Season Light Truck/SUV

Designed to provide long on-road life while combining dry handling and wet braking with all-season traction, even in light snow.



- **Four Wide Circumferential Grooves** evacuate water from the contact patch, increasing hydroplaning resistance for enhanced wet handling and control in standing water.



- **Zigzag Lateral Sipes**  
increase traction in light snow by providing additional biting edges.



Get a **\$50** Tire Rack Prepaid Mastercard®

**Offer Valid September 1-30, 2017**

**Offer Exclusively Available from Tire Rack!**

\*Purchase a set of four (4) Sumitomo Encounter AT and Encounter HT tires and you may be eligible to receive a \$50 Tire Rack Prepaid Mastercard after mail-in rebate. Tires must be purchased from Tire Rack's in-stock inventory between 12:00 a.m. EDT September 1, 2017, and 11:59 p.m. EDT September, 2017. Offer not valid if tires are returned. Visit [www.tirerack.com/specials](http://www.tirerack.com/specials) for complete details.



Prepaid card is given to you as a reward, refund or rebate and no money has been paid by you for the card. Prepaid card is issued by MetaBank®, Member FDIC, pursuant to license by Mastercard International Incorporated. Mastercard is a registered trademark of Mastercard International Incorporated. No cash access or recurring payments. Card valid for up to 6 months; unused funds will be forfeited at midnight EST the last day of the month of the valid thru date. Card terms and conditions apply, see [MyPrepaidCenter.com/site/mastercard-promo](http://MyPrepaidCenter.com/site/mastercard-promo).



**Ultraleggera HLT**  
19 20

**Alleggerita HLT**  
16 17 18

**Hyper GT HLT**  
18 19 20

**O.Z.**  
RACING

## A HUGE SELECTION OF OVER 1,500 DIFFERENT WHEELS



**Sparco Assetto Gara**  
14 15 16 17 18

**Sparco Assetto Gara**  
15 16 17 18

**Sparco Pro Corsa**  
17 18

**Sparco Terra**  
15 16 17

**Sparco Terra**  
16 17

**Bremmer Kraft BR15**  
17 18

**Bremmer Kraft BR16**  
17 18 19



**FLOW ONE F1**  
18 19 20

**FLOW ONE F2**  
18 19 20

**FLOW ONE F3**  
18 19 20

**Verde Parallax**  
19 20 22

**Verde Saga**  
17 18 20



**Enkei Tuning Raijin**  
18

**Enkei Tuning TD5**  
17 18

**Enkei Tuning TS-10**  
17 18

**Enkei Tuning TX5**  
17 18

**Advanti DST HY Hybris**  
19 20



**Enkei Perf. Draco**  
16 17 18

**Enkei Perf. SS05**  
17 18 20

**Enkei Perf. X-Over**  
17 18 20

**Enkei Racing RPF1**  
15 16 17 18

**ASA AR1**  
17 18

### See Them on Your Vehicle!



Enter your vehicle at [tirerack.com](http://tirerack.com) to experience one-click access to everything that fits it.

### What About TPMS?

We can assist you in selecting wheels that are compatible with your vehicle's sensors. We also offer an extra set of sensors for all TPMS systems, so your tire and wheel package can arrive with sensors already installed.

### McGard® Locking Wheel Nuts/Bolts

Function like regular lug nuts/bolts, but require a special key tool (included) for installation and removal.

Starting at \$16<sup>95</sup> Call to order.







# One Tool to Rule Them All

We ride the Dodge **Demon** out of Helltown, one burnout at a time. \_by K.C. Colwell

▼  
**YOU DON'T DRIVE A NAIL** with a screwdriver. You don't change a tire with a blender. Victorinox would have you believe that a single device can do the work of 33 or more, but have you ever tried to trim a tree with a Swiss Army knife? Truly effective tools are purpose-built. So when Tim Kuniskis, Fiat Chrysler's head of passenger-car brands, declares, "It's not a [Mustang] GT350R or [Camaro ZL1] 1LE" as we're staring down a wide-body Dodge Challenger SRT Demon sporting street-legal drag radials and a host of proprietary drag-strip bits, our inner monologue can't help but say, "Yup."

Then it starts to rain.

Water plus drag radials plus 840 horsepower is an equation we don't ever intend to solve. Enter Plan B, which means delaying our flight home in exchange for three passes at Lucas Oil Raceway in Indianapolis the next morning. We drove this long-anticipated hellspawn exactly 19,641 feet, and most of that was idling along to return to the staging area. The Demon will turn

**[+] 840 horsepower, fender flares. Need we say more?**  
**[-] Not rain friendly, convoluted launch sequence.**

right, we think, but we made just six 180-degree left-handers.

We know exactly how far we drove it because we brought a VBox along to see if we could come close to the 9.65-second quarter-mile time Dodge claims for the Demon. We didn't. In fact, our times were far enough off that we're not publishing them yet. It isn't that we don't believe SRT's claim that a Demon ran a 9.65-second quarter-mile. It's just that we think that time requires atypical conditions: sea level, warm track, cool and dry air. When we do get around to testing a Demon by our methodology, it's still not likely to be as diabolically quick as advertised. We expect a stock Demon to run a quarter-mile in the merely insane low-10-second range. Knock a few tenths off if it's fitted with skinny front wheels and tires and burning 100-octane and the launch surface is meticulously prepared with all the VHT the EPA will allow.

About those skinnies: A Demon rolls off the assembly line with a supercharged 6.2-liter V-8 pumping out 808 horsepower and 717 pound-feet of torque. Asking price is \$86,090. For \$86,091, however, buyers also get a Demon Crate shipped to their home. Inside are skinny front wheels, a new engine computer, all the tools needed to change wheels trackside, and more. The Crate converts

# Drivelines



**800+ Stores Nationwide or HarborFreight.com**




**SUPER COUPON**



**1 TON CAPACITY  
FOLDABLE  
SHOP CRANE**

Customer Rating

★★★★★

**SAVE \$169**

- Boom extends from 36-1/4" to 50-1/4"
- Crane height adjusts from 82" to 94"

Compare \$269

ITEM 69512

61858/69445 shown

**\$99<sup>99</sup>**

~~**\$169<sup>99</sup>**~~



41759238

 **SUPER COUPON**

**20% OFF**

**ANY  
SINGLE  
ITEM**

41690443

Limit 1 - Coupon per customer per day. Save 20% on any 1 item purchased. \*Cannot be used with other offers or discounts on the same item. Excludes gift certificates, service fees, memberships, Extended Service Plans, all used goods items, 1 Day Parking Lot, car washes, computer services, tires, auto care, car detailing, car cleaning, car waxing, car washing, car painting, welders, Admiral Range, Colors, CoverPro, Drycleaner, Eyeglasses, Express, Homeplus, Jupiter, Lamps, Poolside, Restaurant, Tempzone, Village, Volkswagen, Volvo, and specialty or prior purchases. Non-transferable. Original coupon must be presented. Valid through 1/12/18.

**PITTSBURGH** AUTOMOTIVE  
**#1 SELLING JACKS IN AMERICA**


**SUPER COUPON**

**RAPID PUMP® 1.5 TON ALUMINUM RACING JACK**

**SAVE \$50**

- 3-1/2 Pumps Lifts Most Vehicles
- Lightweight 34 lbs.

**Customer Rating**  




**\$59.99**

~~**\$79.99**~~

**Compare \$109.99**

**ITEM 68053/62160**  
**62496/62516/60569 shown**



**41783977**

LIMIT 3 - Coupons valid thru 1/21/16\*

CHICAGO



ELECTRIC

POWER TOOLS



SUPER COUPON

10" SLIDING COMPOUND MITER SAW

SAVE

\$84



Blade sold separately.

Customer Rating

★★★★★

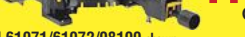
- Powerful 15 amp motor

\$84.99

\$114.99

Compare \$179

ITEM 61971/61972/98199 shown



4 18030999

1 MITER Saw Power Tools 10" 1972198

**WARRIOR**  **SUPER COUPON**

**29 PIECE TITANIUM  
DRILL BIT SET**

**Customer Rating**

★★★★★

**SAVE  
83%**

**\$9.99**

ITEM 62281 Compare  
61637 shown **\$60** ~~\$179.99~~

41812040

LIMIT 1 - Coupon valid through 1/21/18\*

**HERCULES BEATS DEWALT**  **SUPER COUPON**

**20 VOLT LITHIUM CORDLESS**  
**1/2" COMPACT DRILL/DRIVER**

- 576 in. lbs. of torque
- Weighs 3.6 lbs.

**\$99.99** **NEW**

**SAVE \$79**

**Compare \$179 ITEM 63381**





418383442  
LIMIT 4 - Cuts from 1/2" through 1 1/2" 18"

**✂ SUPER COUPON**

**TILTING FLAT PANEL TV MOUNT**

Customer Rating

★★★★★

**SAVE \$85**

**HOLDS FLAT SCREEN TV,  
UP TO 70 INCHES**

- 176 lb. capacity

Compare  
**\$99.99** ~~**\$249.99**~~ **\$149.99**

ITEM 62289/61807 shown

41836644

LIMIT 1 - Coupon valid through 1/12/18\*



**CENTRAL  
MACHINERY**



**SUPER COUPON**

## 20 TON SHOP PRESS

- Pair of Arbor Plates Included

**SAVE  
\$220**

**\$149<sup>99</sup>**

**ITEM 32879**  
60603 shown

Compare

**\$369.<sup>99</sup>**





41566156

LIMIT 3 - Coupon valid through 1/12/18\*

**CENTECH** ✂ **SUPER COUPON**

Customer Rating **12 VOLT, 2/10/50 AMP**  
 **BATTERY CHARGER/  
ENGINE STARTER**



**SAVE 57%**

Compare ~~\$69.99~~ **\$49.99** **\$29.99**

ITEM #60581/60653 shown



41868327

LIMIT 5 - Coupon valid through 1/12/18\*





**Customer Rating**

★★★★★

**STEP STOOL/ WORKING PLATFORM**

**SAVE 65%**

- 350 lb. capacity

**\$1999**

**~~\$2999~~**

**ITEM 62515/66911 shown Compare \$57.55**



418741817

**\*Original coupon only. No use on prior purchases after 30 days from original purchase or without original receipt. Valid through 1/12/18.**

At Harbor Freight Tools, the "Compare" or "comp at" price means that the same item or a similar functioning item was advertised for sale at or above the "Compare" or "comp at" price by another retailer in the U.S. within the past 180 days. Prices advertised by others may vary by location. No other meaning of "Compare" or "comp at" should be implied. For more information, go to [HarborFreight.com](http://HarborFreight.com) or see store associate.





the Demon's 91-octane engine to an 840-hp, 100-octane reactor with one mission: traveling 1320 feet at a time.

To get this street car into the nines, drivers must perform the vehicular equivalent of a Mortal Kombat finishing move. Hit the right buttons, pedals, and paddles in the correct sequence and you will destroy all other production cars. Get it wrong and the Demon shakes a little and barely moves. The routine, which we suspect is intentionally complex to prevent street use, goes as follows:

Activate Drag mode by double-tapping the SRT button, and select the high-octane option if you're running high-test for 840 horsepower. Drag mode disables the cabin air conditioning and routes its power to the SRT Power Chiller, a device that can drop the intake temperature by as much as 18 degrees by cooling the liquid in the liquid-to-air intercooler circuit.

Creep up to the burnout box and activate line lock via the infotainment screen. Hold the "OK" button on the left side of the steering wheel and do a four-to-five-second burnout to heat and clean the tires. Roll up to the staging lights and ready the TransBrake [see tech highlight]. Pull and hold both shifter paddles while managing forward motion with your left foot on the brake pedal. This removes any lash in the driveline and preloads the driveshaft and transmission with torque. Releasing one of the paddles then lifting off the foot brake activates the TransBrake, and the car will remain locked in place unless the 2350-rpm limit is exceeded. It's an exercise that's easier said than done, given the Demon's light-switch-like throttle.

With the launch routine properly executed, the SRT's Torque Reserve—basically a two-step ignition—kicks in. Torque Reserve injects fuel into only some cylinders but keeps all the valves working to maximize airflow through the engine. This allows the supercharger to build maximum boost without the engine making maximum power.

Hold the revs at about 1700 rpm then simul-

## 2018 DODGE CHALLENGER SRT DEMON

**VEHICLE TYPE:** front-engine; rear-wheel-drive; 1-, 2-, or 5-passenger; 2-door coupe

**BASE PRICE:** \$86,090

**ENGINE TYPE:** supercharged and intercooled pushrod

16-valve V-8, iron block and aluminum heads,

port fuel injection

**DISPLACEMENT:** 376 cu in, 6166 cc

**POWER:** 808 or 840 hp @ 6300 rpm

**TORQUE:** 717 or 770 lb-ft @ 4500 rpm

**TRANSMISSION:** 8-speed automatic with manual shifting mode

**DIMENSIONS**

**WHEELBASE:** 116.2 in

**LENGTH:** 197.5 in

**WIDTH:** 78.8 in

**HEIGHT:** 57.4 in

**PASSENGER VOLUME:** 94 cu ft

**TRUNK VOLUME:** 16 cu ft

**CURB WEIGHT:** 4300 lb

**PERFORMANCE (C/D EST)**

**ZERO TO 60 MPH:** 2.3–2.6 sec

**ZERO TO 100 MPH:** 5.7–5.9 sec

**1/4-MILE:** 9.8–10.0 sec

**TOP SPEED:** 168 mph

**FUEL ECONOMY**

**EPA COMBINED/CITY/HWY:** 13/10/18 mpg (C/D est)

taneously release the other paddle and bury the throttle. At once, Torque Reserve snaps off, the TransBrake releases, and glory flows freely from the Demon's exhaust. The first launch is downright shocking. If you want to simulate the sensation of Dodge's claimed 1.8-peak-g launch, just have a friend kick you in the chest as you jump backward off your roof.

Bog or boil scenarios are easy in the Demon. But get it right—we'd need another dozen passes, maybe more—and the Demon will marvelously deny its front tires the effects of gravity for a few feet. And that, friends, is what happens when you're using the right tool for the job.

### tech highlight

## LAUNCH BRAKE

The TransBrake feature of the Demon's ZF 8HP90 automatic transmission borrows an old drag racer's trick for a quicker launch off the line. A transmission brake allows the car to launch from a higher engine speed and with a greater force than the conventional brake-torque method permits. That force would overpower the wheel brakes during a brake torque, either spinning the rear tires or causing the skinny front tires to slide.

Mechanically, the Demon's gearbox is identical to the Hellcat's; all the changes are in the programming. When activated, the TransBrake engages clutches A, B, C, and E (there are five total), a combination that locks the output shaft and prevents it from turning the tires. Once it's commanded to release, the TransBrake disengages clutch E and delivers full load to the rear wheels in less than 0.15 second.

(Attorney's note: After convincing ZF that such a feature was possible, SRT is trying to patent the tech under broad terms, as the same effect could be seen with a different combination of clutches.)

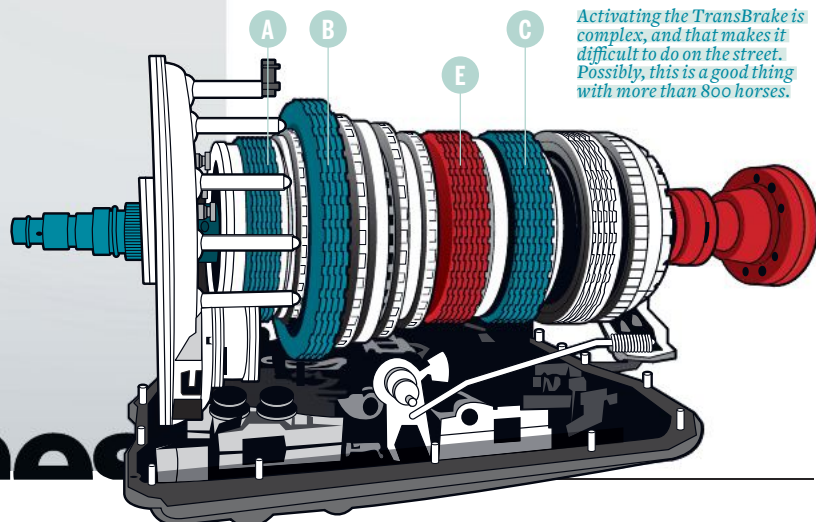


ILLUSTRATION BY PETE SUCHESKI



# 65 Year Old Grandpa Finds A Proverbial “Fountain Of Youth”

At most fitness gyms, the younger guys can run much faster and lift way more weight than the older guys.

But one gym in California is seeing the reverse – one of their oldest members is dominating the young guys!

How is this happening?

Well, it turns out this man’s story may hold the answer to the “fountain of youth.”

65-year-old Dave Wilson has been running circles around the younger members in their 20’s at his local gym.

The younger guys in their 20’s have even challenged him to weight-lifting contests... and Dave has been CRUSHING the competition!

We had to see this for ourselves, so we went to Dave’s gym and asked him – What’s your secret?

“I just do this once a day, every day,” Dave told us. “I’ve been doing it for a while now, and I’ve never felt better! I feel like I’m in my 30’s again.”

Until he discovered this special secret, Dave was convinced he would never be able to enjoy the fitness lifestyle he once loved as a younger man.

But now, Dave feels better than ever. In fact he’s even training for a triathlon later this year.

And the best part? Dave’s neck pain and muscle aches have all improved.

“I’m glad I discovered this method when I did,” said Dave, a grandpa with four grandkids. “At first I didn’t think such an easy little trick could actually work, but here I am! The young guys at my gym can’t believe it!”

And it doesn’t just work for Dave. His wife started using the same method, and she also found the



same “fountain of youth” - increased energy, less joint pain, better sleep, and even improved muscle tone.

Dave was kind enough to let us in on his incredible secret, and you can go to **[www.LCR27.com](http://www.LCR27.com)** learn the shocking method, which is based on prior research done at Harvard and Cornell Universities, into what actually causes the biological process of aging.

If you’ve been feeling the symptoms of aging – chronic fatigue, lower energy, or unwanted weight gain – then it is even more important that you watch the video now at **[www.LCR27.com](http://www.LCR27.com)**



# The Stoic Beast

Audi's new **RS5** coupe is a 450-hp pussycat. *by Erik Johnson*

▼ **SHOEHORNED BETWEEN SPAIN AND FRANCE**, the tiny landlocked principality of Andorra is draped over 181 square miles of Pyrenees mountains. Fewer than 90,000 people call it home, but many more enjoy its duty-free booze, myriad ski resorts, and friendly income-tax code. While winter sees the peaks blanketed by skiers, summer finds them laced with lush green scrub, and they encourage a different type of frolicking: exploring the ribbons of asphalt that climb up from the valleys and back down again. It was here that we drove the latest Audi RS5 coupe.

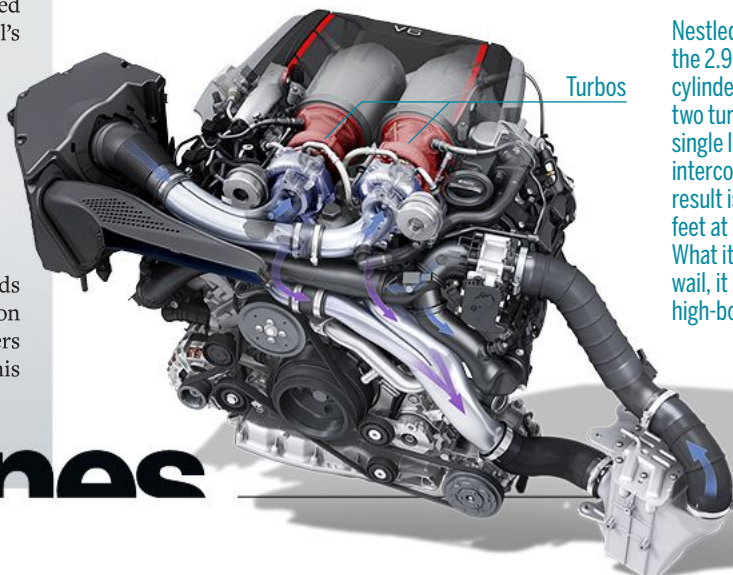
The all-new RS5 packs a twin-turbocharged 2.9-liter V-6 in place of the previous model's thunderous, naturally aspirated 4.2-liter V-8. Horsepower sits unchanged at 450, but the turbos increase torque from 317 pound-feet to a far more fulsome 443 and push the output peaks way down the tach: Max power is now available from 5700 rpm to 6700 rpm, versus 8250 rpm in the old car, and full twist comes 2100 rpm earlier, at 1900 rpm.

The 90-degree six-cylinder is 44 pounds lighter than the V-8—all forced-induction hardware included—and has its turbochargers snuggled between the cylinder banks. This

hot-V configuration's largest benefit is to emissions, according to Audi Sport chief Stephan Reil, as less plumbing allows the catalysts to warm up more quickly. A shorter path for exhaust gases also reduces lag, and the V-6 is one hell of a hard charger, with power, torque, and speed delivered nearly instantaneously on a wave that ebbs

and flows in direct proportion to the angle of your right ankle.

None of Audi's dual-clutch automatics can handle the V-6's torque—Porsche pairs a version of this engine with its eight-speed PDK but doesn't share that gearbox with other VW Group brands—and so an eight-speed conventional automatic has supplanted the last RS5's seven-speed double-clutcher. Gearchanges feel slower, but performance doesn't seem to suffer. Unfortunately, there's no manual available, but the automatic's programming is so good, and



Turbos

Nestled between the 2.9-liter V-6's cylinder banks are two turbos feeding a single liquid-to-air intercooler. The result is 443 pound-feet at 1900 rpm. What it lacks in V-8 wail, it makes up in high-boost punch.

## Drivelines





Far left: Black Optic appearance pack darkens the mirror caps. Left: Truncated-hexagon-shaped seat stitching will amaze your bottom.

the plasticky shift paddles so unsatisfying, that we simply let it work on its own the majority of the time.

Even though it's the most heavily armed member of the A5 clan, the RS5 is still easy to live with. It's tautly suspended and rolls on 20-inch wheels with wide, low-profile rubber, yet has a supple ride in the adaptive suspension's Comfort and Auto modes, smoothing out heaving and patched Andorran pavement with no bobbing or bounding. Dynamic mode is for focused driving only, though, as things can get choppy on anything but the flattest roads.

Go ape, and you'll find docile handling and massive amounts of grip at both ends. The RS5 is sure-footed in both the wet and the dry, and you can acclimate to its behavior as quickly as the car piles on speed.

Quattro all-wheel drive and a torque-vectoring rear differential deliver corner-exit thrust that keeps the coupe faithfully going where it's pointed. This RS5 feels more balanced than the last, but it's still a nose-heavy car and prefers a rapid pace, not a frenetic one. The steering is accurate and less robotic-feeling than before, albeit still lacking in feedback. Momentum is scrubbed dutifully and quickly with either the standard brakes or the optional carbon-ceramic front rotors, which belie the material's reputation for a lack of smoothness.

An active exhaust features a resonating

cross pipe just aft of the rear axle, plus movable flaps on the left and right sides; the chassis modes control how eager the flaps are to open as well as how often. The engineer in charge of tuning the RS5's exhaust was given a 2000 RS4 (which never came to the U.S. but had a twin-turbocharged 2.7-liter V-6) and told, "Make it sound like that." He nailed the sound quality. At full throat, the new RS5 is pissed off, with fat blats on upshifts and a belligerent growl not far off the old V-8's. Yet its noises seem as if they could be coming from next door, in part because the cabin is so well insulated and in part because Audi doesn't augment the sound with the stereo speakers. The company does, however, cop to enhancing low-range frequencies below 3000 rpm with a "shaker" located beneath the cowl that effectively turns the windshield into a massive speaker cone. The modest volume fits the grand-touring character of the RS5, but it's still a bit of a bummer, and even the pops executed on overrun sound mostly as if someone you've kidnapped is banging on the inside of the trunklid.

Pricing starts around \$70,000 and tops out roughly \$15,000 above that. The standard exterior treatment includes a mixture of black and silver trim applied variously to the rear lip spoiler, body-side spear, mirror caps—these are RS-specific silver, of course—and lower front fascia. An available Black Optic package turns all the aforementioned pieces, well, black. Other markets can spec exposed carbon-fiber trim as well as a bare-carbon roof that might be offered here if Audi can certify its crashworthiness. Optional driver-assistance tech includes adaptive cruise control with a traffic-jam-assist system that will accelerate and stop the car at speeds up to 155 mph—for all those snarls that occur on super-speedway bankings—while also automating the steering in certain situations below 40 mph.

In this latest generation, Audi expands both the RS5's luxury attributes and its dynamic capabilities. With the BMW M4 and the Mercedes-AMG C63 growing more monstrous and hard-riding with every revision, the RS5 is the most livable among its competitive set, and a possible four-door sportback version would add practicality. Tingling its pilot's spine is among the RS5's ancillary—not primary—skills, however, and stoicism remains the bedrock upon which this car is built. Meanwhile, the wait continues for something truly unhinged from Audi.

**[+] Comfortable long-haul express, easily exploited chassis, sounds fantastic but ...**  
**[-] ...is still too quiet and endowed with an overly serious personality.**

## 2018 AUDI RS5

**VEHICLE TYPE:** front-engine, all-wheel-drive, 4-passenger, 2-door coupe

**BASE PRICE:** \$70,000 (est)

**ENGINE TYPE:** twin-turbocharged and intercooled DOHC 24-valve Miller-capable V-6, aluminum block and heads, direct fuel injection

**DISPLACEMENT:** 177 cu in, 2894 cc

**POWER:** 450 hp

@ 6700 rpm

**TORQUE:** 443 lb-ft

@ 1900 rpm

**TRANSMISSION:** 8-speed automatic with manual shifting mode

**DIMENSIONS**

**WHEELBASE:** 108.9 in

**LENGTH:** 185.9 in

**WIDTH:** 73.3 in

**HEIGHT:** 53.5 in

**PASSENGER VOLUME:** 87 cu ft

**TRUNK VOLUME:** 12 cu ft

**CURB WEIGHT:** 4050 lb

**PERFORMANCE**

**(C/D EST)**

**ZERO TO 60 MPH:** 3.8 sec

**ZERO TO 100 MPH:** 10.2 sec

**1/4-MILE:** 12.1 sec

**TOP SPEED:** 155–174 mph

**FUEL ECONOMY**

**EPA COMBINED/CITY/**

**HWY:** 23/20/29 mpg

(C/D est)







# Pay Dirt

Subaru improves the latest **Crosstrek** for both on- and off-road.

by David Beard

▼ **PANNING THE VAST ARRAY** of compact crossovers in search of the golden high-rise hatch returns muddy results. Even so, consumers continue rushing to dealerships to purchase mini-utes from factory mines at record rates. Subaru's all-new Crosstrek, which we drove in South Dakota's Black Hills, offers not only practicality but some oft-missing functionality, too.

As with the first-generation Crosstrek, Subaru lifted its Impreza to create the new ute—ground clearance rises to 8.7 inches from 5.1 in the hatchback—and wrapped its lower edges in blastic to provide a rugged look. Like its low-riding sibling, the Trek uses the Subaru Global Platform, a solid architecture that increases rigidity by more than 70 percent over the old bones. Despite the Crosstrek's height, body roll is adequately managed. Minor road imperfections in western South Dakota's winding tarmac go largely unnoticed—only major impacts and dirt-road washboard disrupt the serenity.

With VW and Mazda dynamics in its sights, Subaru sped up the steering; it's responsive and light, but there's little feedback. Attacking roundabouts en route to Whole Foods is now easier with the Crosstrek's new brake-based torque vectoring. And a revised master cylinder and brake booster yield a firmer pedal that's easy to modulate.

Motivation comes from a revised 2.0-liter flat-four. Said to be 80 percent new, it now produces 152 horsepower—just four

## 2018 SUBARU CROSTREK

**VEHICLE TYPE:** front-engine, all-wheel-drive, 5-passenger, 4-door hatchback

**BASE PRICE:** \$22,710

**ENGINE TYPE:** DOHC 16-valve flat-4, aluminum block and heads, direct fuel injection

**DISPLACEMENT:** 122 cu in, 1995 cc

**POWER:** 152 hp

@ 6000 rpm

**TORQUE:** 145 lb-ft

@ 4000 rpm

**TRANSMISSIONS:** 6-speed manual, continuously variable automatic with manual shifting mode

### DIMENSIONS

**WHEELBASE:** 104.9 in

**LENGTH:** 175.8 in

**WIDTH:** 71.0 in

**HEIGHT:** 63.6 in

**PASSENGER VOLUME:**

101 cu ft

**CARGO VOLUME:**

21 cu ft

**CURB WEIGHT:**

3100–3300 lb

### PERFORMANCE (C/D EST)

**ZERO TO 60 MPH:**

7.9–10.1 sec

**ZERO TO 100 MPH:**

26.7–30.2 sec

**1/4-MILE:** 16.4–17.8 sec

**TOP SPEED:** 120 mph

### FUEL ECONOMY

**EPA COMBINED/CITY/**

**HWY:** 25–29/23–27/

29–33 mpg



stant redline wail, the CVT on Premium and Limited models incorporates a seven-speed stepped-ratio function to mimic traditional gears when you boot the accelerator.

Crosstreks with the CVT now are equipped with Subaru's X-Mode off-road system. When activated, X-Mode locks the trans into lower ratios and increases clutch pressure in the center differential to more evenly distribute torque. It also fine-tunes the stability-control system's sensitivity and has hill-descent control for steep slopes. Off the beaten path in an active rock quarry, the Crosstrek performed as promised, climbing loose stones with ease.

Shockingly, the CVT shone brightest in our drive, its infinite ratios allowing easier access to the engine's modest output. When paired with the six-speed, the four-banger holds on to revs between shifts and requires frequent downshifts to stay in the powerband. The trade-off for a sleepy engine is fuel efficiency: The EPA estimates 25 mpg combined for manual versions and 29 with the CVT. Pricing starts with the \$22,710 cloth-interior base model and climbs to \$27,210 for the leather-lined Limited. The company's EyeSight driver-assist system is optional on top trim levels.

Subaru sold 360,000 first-gen Crosstreks in America, and that success isn't likely to diminish. With a solid foundation, a comfortable ride, and usable off-road ability, the 2018 Crosstrek should continue to line Subaru's pockets with the shiny stuff.

more than before—at 6000 rpm. Peak torque remains 145 pound-feet but occurs 200 rpm earlier, at 4000, and doesn't fall off as quickly. The engine revs smoothly to redline, but at an altitude of 4000 feet, the Crosstrek is just plain slow.

Delivering torque to all four wheels is the task of one of two transmissions: a six-speed manual is available on every-

thing but the Limited trim level, where the otherwise-optional continuously variable transmission is standard. The clutch pedal has smooth takeup, and the nicely weighted shifter travels through the gates with ease. To eliminate con-

**[+] Excellent ride, hushed cabin, good fuel economy.**

**[–] Gutless engine, the CVT is better than the manual.**



DISCOUNTTIREDIRECT.COM

# winter YOUR JOURNEY STARTS HERE

**FREE SAME-DAY SHIPPING!** Some restrictions apply.

BRIDGESTONE

BRIDGESTONE

Continental

COOPERTIRES

COOPERTIRES

HANKOOK

HANKOOK



Blizzak DMV2

Blizzak WS80

Winter Contact SI

Weather Master S/T2

Discoverer M+S

I\*Pike RW11

Winter I\*cept W320

FALKEN  
TIRES

GENERAL TIRE

MICHELIN

nokian  
TYRES

nokian  
TYRES

YOKOHAMA

YOKOHAMA



HS449

Altimax Arctic

X-ice Xi3

Hakkapeliitta 7

Hakkapeliitta R2

iceGuard iG51v

Geolander I/T G072

## BUY NOW & SAVE

with a DISCOUNT TIRE credit card



Rebate offers available on tire and wheel purchases with your DISCOUNT TIRE credit card.

Purchases subject to credit approval. Call for details.



## WINTER TIRES:

They're not just for snow

They're safer below  
**45°** than  
all-season  
tires

BRIDGESTONE

COOPERTIRES

GOODYEAR

HANKOOK

BFGoodrich

MICHELIN

NITTO



Driveguard

Zeon RS3-G1

Eagle Sport AS

Ventus V12 EV02

T/A-A/T KO2

Defender LTX MS

Terra Grappler G2

DRAG

MB  
WHEELS

TSW

Vöxx

AMERICAN  
OUTLAW  
WHEELS

BLACK HILLS  
RACE ALLOYS

MB  
WHEELS



DR-69

Icon

Bathurst

Lago

Ranger

Tanay

Chaos

DISCOUNTTIREDIRECT.COM

**800.739.8999**

M-F 8 a.m. – 8 p.m. EST SAT 8 a.m. – 5 p.m. EST

**DISCOUNT**  
**TIRE DIRECT**





TESTED

# It's Alive!

The Toyota **Camry XLE hybrid** is back from the dead thanks to a new platform, a revised hybrid system, and an infusion of style. *—by Rich Ceppos*

**THE CAMRY HAS BEEN MARCHING FORWARD** in a zombie-like trance for decades, devouring huge chunks of the family-sedan market—it's been the best-selling mid-size sedan in the U.S. 15 years running—fueled by a combination of indefatigable reliability and relentless, boring sameness. We've long thought the Camry needed a massive jolt of personality to bring it to life, but with hordes of customers snapping them up—in some years more than 400,000—Toyota didn't see any reason to fix what wasn't broken.

Until now, that is. Toyota's C-suite car enthusiast, CEO Akio Toyoda, is on a quest to reanimate the company's products. So the 2018 Camry got hauled into the laboratory, shocked with high-voltage engineering, and emerged on an all-new platform, restyled inside and out and, well, surprisingly alive. Three powertrains, including inline-four and V-6 gasoline options, are available.

The XLE hybrid we tested proved that the Camry has transcended its risk-averse past to offer more than an absence of negatives. Its body is 30 percent stiffer in torsion and has been stretched 1.2 inches and lowered by an inch—though the larger footprint doesn't provide any more passenger room. Moving the battery under the rear seat nets two cubic feet more trunk space. We think the car looks pretty ritzy, except for a lower-grille treatment that reminds us of venetian blinds.

**[+]** Near-luxury interior, hates gas stations.  
**[–]** Front end is grimacing, CVT lets engine thrum.

Evidence abounds that the Camry left its boring old self behind: Our XLE hybrid's interior bordered on luxurious, with Lexus-esque quilted-leather seating, an abundance of soft-touch materials, and a minimum of hard plastic surfaces. Its standard equipment roster is thorough and includes a comprehensive list of active safety gear. And then there's the way it drives. The Camry

no longer wallows like a pontoon boat on a choppy lake but strides confidently over bumps and damps out lesser pavement blemishes with a muted thump. The steering has a clear sense of center, adequate heft at highway speeds, and obedient responses to your directives. The new Camry XLE won't have you wishing you were on a serpentine two-lane, but it is now competent and composed.

The 208-hp hybrid powertrain—a 2.5-liter four-cylinder paired with a 118-hp electric motor—propels the XLE seamlessly and feels peppier than its 7.9-second zero-to-60-mph time might suggest, though the CVT does let the engine slur up to, then hang in, the coarser end of the rpm range. EPA numbers are way up. The new Camry XLE hybrid is rated at 46 combined mpg compared with last year's score of 38. Extracting that mileage was easy: We routinely clocked 37 to 44 mpg in our XLE tester on around-town runs, and one editor saw 45 mpg on his 50-mile interstate commute. The lighter LE hybrid, which uses a lithium-ion battery instead of the XLE and SE's nickel-metal-hydride pack, is now America's most efficient mid-size hybrid sedan with a combined rating of 52 mpg. Even the squishiness common to hybrid brakes has been largely eliminated; only some low-speed touchiness remains.

Composed, luxurious, harmonious, alive—these aren't words we've used to describe a Camry before. But they are now. The Camry, it seems, finally has a pulse.

## SIPPERS

2018 Camry XLE hybrid  
EPA combined mpg

46

2017 Camry XLE hybrid  
EPA combined mpg

38

## 2018 TOYOTA CAMRY XLE HYBRID

**VEHICLE TYPE:** front-engine, front-motor, front-wheel-drive, 5-passenger, 4-door sedan

**PRICE AS TESTED:** \$37,245

**BASE PRICE:** \$33,135

**POWERTRAIN:** DOHC 16-valve 2.5-liter Atkinson-capable inline-4, 176 hp, 163 lb-ft + permanent-magnet synchronous AC electric motor, 118 hp, 149 lb-ft; combined system, 208 hp

**BATTERY:** air-cooled nickel-metal hydride, 1.6 kWh

**TRANSMISSION:** continuously variable automatic with manual shifting mode

### DIMENSIONS

**WHEELBASE:** 111.2 in

**LENGTH:** 192.1 in

**WIDTH:** 72.4 in

**HEIGHT:** 56.9 in

**PASSENGER VOLUME:** 99 cu ft

**TRUNK VOLUME:** 15 cu ft

**CURB WEIGHT:** 3656 lb

## C/D TEST RESULTS

**ZERO TO 60 MPH:** 7.9 sec

**ZERO TO 100 MPH:** 19.3 sec

**ZERO TO 110 MPH:** 23.6 sec

**ROLLING START, 5–60 MPH:** 8.1 sec

**1/4-MILE:** 16.0 sec @ 91 mph

**TOP SPEED:** 116 mph (governor limited)

**BRAKING, 70–0 MPH:** 180 ft

**ROADHOLDING, 300-FT-DIA SKIDPAD:** 0.84 g

**FUEL ECONOMY EPA COMBINED/CITY/HWY:** 46/44/47 mpg

**C/D OBSERVED:** 40 mpg

**Shell V-Power NITRO+**  
Premium Gasoline

The Official Fuel of  
CAR AND DRIVER

# Drivelines



SHANE PARSONS,  
WOUNDED VETERAN



## SOMETIMES THE HARDEST FIGHT COMES AFTER THE BATTLE.

Wounded Warrior Project® long-term support programs provide these brave men and women whatever they need to continue their fight for independence. At no cost. For life. Help us help more of these warriors in their new life-long battle. Find out what you can do at [findWWP.org](http://findWWP.org).



©2017 WOUNDED WARRIOR PROJECT, INC. ALL RIGHTS RESERVED.

## BRAKEWORLD

GUARANTEED BEST PRICE • LARGEST SELECTION  
GUARANTEED FITMENT • ADVICE YOU CAN TRUST

### ULTRA HIGH QUALITY ROTORS



- Massive Stopping Power
- Cooler Brakes
- Longer Rotor Life



### PERFORMANCE BRAKE PADS

- NO BLACK DUST
- Super Quiet & Clean
- Shorter Stopping Distance
- Longer Pad Life
- Advanced Ceramic & Kevlar Pads



### STAINLESS STEEL BRAKE LINES



### PROTECTED NANO COATED ROTORS

AVAILABLE IN:

- Chrome • Black
- Red • Gold
- Blue



SHOP ONLINE 24/7 [WWW.BRAKEWORLD.COM](http://WWW.BRAKEWORLD.COM)  
TOLLFREE: 866.272.5396 **WHOLESALE PRICES!!**

## DR.COLORCHIP™ AUTOMOTIVE PAINT CHIP REPAIR SYSTEMS

### Dramatic chip repairs are this easy!



1. Dab



2. Smear



3. Blend

**...And no paint blobs!**

Go to our website to see how our new Squirt 'n Squeegee kit can quickly repair 100's of chips



**"The Cure for Road Rash"**

4 paint chip repair kit sizes: \$39.95 - \$64.95

**ORDER YOUR KIT TODAY!**

[DRCOLORCHIP.COM](http://DRCOLORCHIP.COM) • 866.372.2548

## RAGGTOPP

Manufacturer Approved

### CONVERTIBLE TOP CARE PRODUCTS

Exterior and Interior Protection  
for Fabric, Vinyl and Leather

\$5 Off Your Next  
Order of \$50 or more  
Use Coupon Code: CandD



Tested and Endorsed by

**HARTZ**

Original Equipment  
Manufacturer of  
Fabric and Vinyl  
Convertible Topping

(800) 377-4700

[www.Wolfsteins.com](http://www.Wolfsteins.com)

PRICE • CAR COVER KIT INCLUDES LOCK, CABLES AND

## WE'VE GOT YOU COVERED

Practically custom-fit **SELECT-FLEECE** black indoor/show car covers and **SELECT-FIT** silver outdoor/indoor car covers. Kits include free storage bag, adjustment straps, cable & lock.



★★★★★  
—BMW 650i owner

**Money well spent.**

—Subaru XV Crosstrek owner

**Free 2-Day Shipping** (CONT'L USA)

Code: **CD2DAY**

Outdoor/Indoor **SELECT-FIT** only **\$99.95**  
Indoor **SELECT-FLEECE** now **\$139.95**  
Get both **FIT + FLEECE** covers for **\$230.00**

**MICROBEAD  
CAR COVERS**

[MicrobeadCarCovers.com](http://MicrobeadCarCovers.com)

**888-627-1129**

Text **CDSHADE** to 617-657-4212  
for a **FREE SUN SHADE** when you  
purchase a Microbead Car Cover.  
(A \$24.95 value) Offer expires 12/31/17 \*See warranty for complete details



• **LIFETIME REPLACEMENT WARRANTY\*** •

MARKETPLACE.....For advertising information call 212-649-4206, 9am-5pm EST





TESTED

# Thunder(s)truck

With 475 horsepower, all-wheel drive, and seating for six, Dodge's **Durango SRT** is a three-row demon. *by K.C. Colwell*

▼  
**ANYONE WHO THINKS HOT-ROD SUVs** are just big-engined and aggressively styled versions of their civilian counterparts should have a chat with the folks at SRT. They strive to make complete packages. Case in point: When developing the Durango SRT, engineers ran the ute around Virginia International Raceway (yep, the same one we visit every year) with and without an intake in the lower-left corner of the front fascia. The difference was 1.2 seconds per lap in hot conditions.

Having an intake positioned close to the ground on an SUV removes considerable utility from the proceedings. We're fine with that in this case, and we're guessing most owners will be, too, because they probably don't have the Rubicon Trail on their to-do lists. The Durango SRT will balk at rocks and ruts, and its Pirelli P Zero Run Flat summer tires, a \$595 option, will protest even the best-groomed gravel roads. But we love the idea of an SUV that can accelerate to 60 mph in 4.7 seconds and snap off 104-mph quarter-mile passes in 13.3 seconds. Those we do. Regularly.

**[+] The price is right, Bob; 6.4-liter V-8 thrust and concert. [-] Only six seats, thirsty engine.**

Dodge would love it if we just accepted its "NHRA-certified" quarter-mile time of 12.9 seconds and never tested its thundertruck. As with the Demon [see page 096], we don't doubt that a Durango SRT made a record-setting pass, but we're skeptical it can do it without the grippy launch surface of a drag strip. Still, we got close.

Transforming a Durango R/T into an SRT means swapping in the gloriously throaty 6.4-liter Hemi from the Grand Cherokee SRT (among others) and modifying the suspension with stiffer springs—3 percent tighter in front, 16 percent in back. The wide-mouthed grille, dual-exhaust bumper, and hood with obligatory scoop and heat-shedding rearward-facing nostrils complete the exterior look. The price jump from the 360-hp R/T to the 475-hp SRT is \$16,700. At \$64,090 to start, this Durango is a whole lotta family truckster.

The six-seater's interior—sorry families of seven, no middle bench—comes standard with leather-and-suede seats, high-bolstered ones for the front row. Our test car also came with an SRT Interior package, its \$1500 price netting a stitched dash cover. The dash isn't genuine leather, but it does a passable imitation of the stuff. The Durango's excellent third row, which is easily accessed and has room for adults, remains.

This SRT variant also gets eight drive modes. Select Sport, Track, Snow, Tow, Valet, or Eco, depending on how you're feeling;

## Drivelines





## 2018 DODGE DURANGO SRT

**VEHICLE TYPE:** front-engine, all-wheel-drive, 6-passenger, 4-door hatchback

**PRICE AS TESTED:** \$71,270

**BASE PRICE:** \$64,090

**ENGINE TYPE:** pushrod 16-valve V-8, iron block and aluminum heads, port fuel injection

**DISPLACEMENT:** 391 cu in, 6410 cc

**POWER:** 475 hp @ 6000 rpm

**TORQUE:** 470 lb-ft @ 4300 rpm

**TRANSMISSION:** 8-speed automatic with manual shifting mode

### DIMENSIONS

**WHEELBASE:** 119.8 in

**LENGTH:** 201.2 in

**WIDTH:** 77.1 in

**HEIGHT:** 71.9 in

**PASSENGER VOLUME:** 133 cu ft

**CARGO VOLUME:** 17 cu ft

**CURB WEIGHT:** 5369 lb

## C/D TEST RESULTS

**ZERO TO 60 MPH:**

4.7 sec

**ZERO TO 100 MPH:**

12.1 sec

**ZERO TO 140 MPH:**

30.0 sec

**ROLLING START,**

**5-60 MPH:** 5.1 sec

**1/4-MILE:** 13.3 sec

@ 104 mph

**TOP SPEED:** 160 mph

(drag limited, mfr's claim)

**BRAKING, 70-0 MPH:**

167 ft

**ROADHOLDING,**

**300-FT-DIA**

**SKIDPAD:** 0.87 g

**FUEL ECONOMY**

**EPA COMBINED/CITY/**

**HWY:** 15/13/19 mpg

**C/D OBSERVED:**

15 mpg

or let the car interpret your inputs while in Auto; or make your own combination of transmission, stability control, all-wheel-drive, damping, and steering settings with the Custom mode. Even in its softest setting, the Durango SRT's ride is appropriately taut. Suspension damping is ratcheted up to a firm but tolerable level in Sport. Track mode, however, is hard enough to polish stones. Bring your mouthguard.

Tow mode engages Active Noise Cancellation. The system, essentially Bose headphones for your cabin, is otherwise only active when the ECU decides to de-power half the cylinders. The idea is that the higher demands of towing generally result in more engine noise, and the echo chamber that is the 48-cubic-foot cargo hold behind the second row (17 cubes with all seats up) amplifies some taxing tones. Our car didn't have the \$995 towing package with its class-leading 8700-pound tow rating and full-use spare tire. The 0.87-g skidpad figure we recorded feels low, subjectively. For starters, turn-in is crisp and precise, and altogether very un-trucklike. The steering also communicates budding understeer with clarity. This Durango is fast and stable at speed, and a stiffer rear anti-roll bar does a commendable job at keeping list in check.

Four 295/45ZR-20 Pirellis and Brembo brake hardware—six-piston calipers on 15.0-inch rotors in front and four pistons on 13.8 inches of iron in the rear—haul the car down from 70 mph in 167 feet, one foot more than the Mercedes-AMG GLS63 and shorter by one foot than the last Grand Cherokee SRT we tested.

As in other SRT models, Dodge's Performance Pages reside within the infotainment screen. You can select from a handful of gauges and display them either in an analog format or as a scrolling ribbon, like an EKG printout. We're not sure why one would want to know the ute's real-time horsepower, but this is a family hauler and those pages will keep kids amused.

Launch control also lurks in the infotainment screen. Set your launch rpm anywhere from 1500 to 3500, left-foot the brake, floor the gas, release the brake, and you'll let loose 475 horsepower and 470 pound-feet through the eight-speed auto. It is that simple. It's also entertaining for

passengers to feel and hear the 6.4-liter prime itself during the factory protocols. As we've found with other torque-converter autos, a hearty brake-torque launch got the SRT off the line slightly better.

Dodge may have found a winning combination here. Three-row SUVs are hot-selling but fraught with stigma, filling the world with dads looking for masculinity insurance. The Durango SRT is a full-coverage policy. Until now, the only other choice for these guys was the GLS63, which runs \$126,225. BMW's X5 M, while quicker, still doesn't offer the optional third row the regular X5 does. Ditto for the Range Rover Sport SVR. Plus, the Durango's tow rating is greater than even the large body-on-frame SUVs from General Motors. And at \$71,270 as-tested, its price undercuts anything even remotely near the same level of performance. This SRT may have been bred on a racetrack, but it is going to live in a lot of garages. ■

*The SRT's reaction-time stopwatch can also be set to clock how quickly Dad pulls to the side of the road after hearing "Jacob bit me!" from the third row.*



**Shell**  
**V-Power**  
**NITRO+**  
Premium Gasoline  
The Official Fuel of  
CAR AND DRIVER

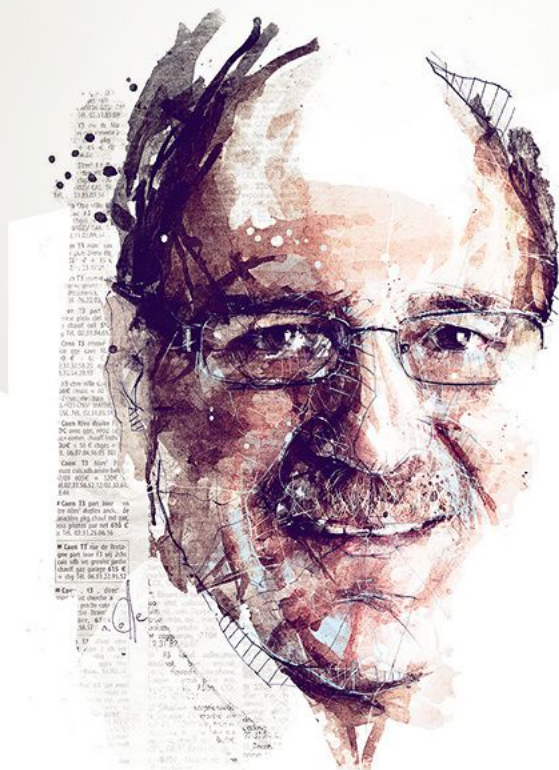


# What I'd Do Differently

## Johan de Nysschen, 57

De Nysschen, a native of South Africa, ran Audi of America and worldwide Infiniti before helming Cadillac, which recently relocated to New York City in 2015.

► interview by JOHN PEARLEY HUFFMAN



### C/D: What does Cadillac gain from being in New York?

**JD:** First, we have to recognize that General Motors is truly a titan corporation. It's very large and very complex. And given the hurry we are in to get Cadillac firing on all cylinders, we had to get the best shot at, among other things, brand separation executed very rapidly. It's not total freedom, but a high degree of decision making on core parts of the business, not only marketing. If we didn't create geographic separation, I'm afraid we'd face the consequences I saw earlier in my career, which is that nothing changes. The meetings stay the same; the people in the meetings stay the same; and, guess what? The decisions and outcomes stay the same. We have Cadillac people—or at least people who are

focused on the luxury business—playing a more prominent part in crucial decision making.

### ■ Why not Miami? Or L.A.?

□ We had to be on the East Coast. We wanted to be in the same time zone and with a relatively easy commute to engineering and design activities remaining in Detroit. New York lends itself to our strategy of mobilizing Cadillac. It's an iconic world city. And it is, let us say, at the epicenter of luxury consumption. It's a great place to draw on the talent, to bring fresh perspectives.

### ■ Why do the Germans set the standard for luxury cars?

□ Their luxury brands have the benefit of focus. That's all they did. Over the decades, one really saw that focus in Mercedes, BMW, and, in later years, Audi, when it was

given a lot of autonomy within VW Group. That focus is what we're trying to emulate here at Cadillac. The German brands haven't had the distractions of also having to deal with the demands and intricacies of mainstream customers and the competitive cost pressures and different product attributes.

### ■ Can you learn from Tesla?

□ Tesla has captured the imagination of people, and I give them credit and wish them well. It impresses most industry insiders how its business model sustains itself. If Dieter Zetsche at Mercedes-Benz or any other industry leaders had the opportunity to sell their cars at a loss, they could sell a lot more. But I guess our shareholders wouldn't tolerate that game plan for long.

### ■ Will there be a Cadillac EV?

□ Oh, absolutely. Without any question, we should expect not only a single model but a portfolio of electric and other alternative-powertrain vehicles from Cadillac.

### ■ Are Cadillac's sedans doomed?

□ Right now, Cadillac has three large sedans: CTS, XTS, and CT6. That's three slices of large. Plus, we have the mid-size ATS. In the future, we're going to have three sedans: a small, a medium, and a large. That's a better balancing of the portfolio. And it's a more efficient use of our resources.

### ■ How is the Chinese market different from ours?

□ Chinese customers attach even greater importance to brand prestige than [customers do] here. Also, Chinese consumers are much younger, and younger buyers are far more demanding in terms of product substance, product quality, and the dealer experience. Since they make up the greatest part of our customer base in China, it forces us to raise the bar very fast and very high.

### ■ Are you impressed with autonomous cars?

□ I sometimes get into trouble. When the division for autonomous driving was first promoted by Google, they spoke of it like it was their idea. They presented their little transportation pod, and that's the absolute antithesis of what any car guy would tolerate. I have gasoline in my veins and, I suppose in the future, electrons. I'm proud of

our company, proud of our brand. We want to embrace that technology as an enabler of our business in the future. But not to become merely passengers.

### ■ What cars do you own?

□ I've been in the business for my entire career and somehow always had jobs that included use of a very fine company automobile as part of the benefits. I don't own an automobile myself today. I am, however, in the market for a classic. I'm looking for a Cadillac Series 62 convertible in the '53 to '57 time range. Those cars were so elegant, and I'm moving into my house, so I'll have a place to park it.

### ■ Is there anything you would have done differently?

□ Privately, I would have wanted to be a better father for my kids and spend more time with them. A lot of executives probably feel the same. And I would have liked to have been a better husband as well. On the other side, in the beginning of my career, I pushed very hard. And that drive and always keeping pressure on everyone around me was perceived by many as very arrogant. I didn't think I was arrogant, but if enough people have that perception, then it's probably true. So I'd probably want to modulate that a little bit. ■

### CUSTOMER SERVICE

Visit [service.caranddriver.com](http://service.caranddriver.com) or write to Customer Service Department, *Car and Driver*, P.O. Box 37870, Boone, IA 50037 for inquiries, requests, changes of mailing and email addresses, subscription orders, payments, etc.

**CAR AND DRIVER** (ISSN 0008-6002) VOL. 63, NO. 4, October 2017, is published monthly, 12 times per year, by **Hearst Communications, Inc.**, 300 West 57th Street, New York, NY 10019, U.S.A. Steven R. Swartz, President & Chief Executive Officer; William R. Hearst III, Chairman; Frank A. Bennack, Jr., Executive Vice Chairman; Catherine A. Bostron, Secretary, Hearst Magazines Division; David Carey, President; John A. Rohan, Jr., Senior Vice President, Finance. © 2017 by **Hearst Communications, Inc.** All rights reserved. Trademarks: *Car and Driver* is a registered trademark of **Hearst Communications, Inc.** Periodicals postage paid at New York, NY, and additional mailing offices. Canada Post International Publications mail product (Canadian distribution) sales agreement no. 40012499. Editorial and Advertising Offices: 1385 Eisenhower Place, Ann Arbor, MI 48108. **SUBSCRIPTION PRICES** United States and possessions: \$13.00 for one year; Canada, add \$10.00; all other countries, add \$24.00. **SUBSCRIPTION SERVICES** *Car and Driver* will, upon receipt of a complete subscription order, undertake fulfillment of that order so as to provide the first copy for delivery by the Postal Service or alternate carrier within 4–6 weeks. **MAILING LISTS** From time to time, we make our subscriber list available to companies who sell goods and services by mail that we believe would interest our readers. If you would rather not receive such offers by postal mail, please send your current mailing label or an exact copy to Mail Preference Service, P.O. Box 37870, Boone, IA 50037. You can also visit [preferences.hearstmagazines.com](http://preferences.hearstmagazines.com) and opt out of receiving marketing offers by e-mail. *Car and Driver* assumes no responsibility for unsolicited material. None will be returned unless accompanied by a self-addressed stamped envelope. Permissions: Material in this publication may not be reproduced in any form without permission. Back issues: Back issues are available for purchase in digital format only from your app store of choice. **POSTMASTER** Send all UAA to C/S. (See DMN 5071.5-2) **NON-POSTAL AND MILITARY FACILITIES** Send address corrections to *Car and Driver*, P.O. Box 37870, Boone, IA 50037. **Printed in the U.S.A.**



PROMOTION



# Esquire

MENS JEWELRY



## *THE ULTIMATE MEN'S JEWELRY COLLECTION*

Designed in collaboration with the experts at Esquire, The Esquire Men's Jewelry Collection encompasses a broad range of materials and styles. Featuring the right blend of classic and contemporary, new and traditional, the expected and the exploratory, this collection delivers the extra 10% with substance and style.

**Left to Right:** Onyx Ring in Sterling Silver \$475, Ridged Cuff Bracelet in Sterling Silver \$650, Red Tiger's Eye Beaded Bracelet \$400, Brown Woven Leather Bracelet \$175.

AVAILABLE EXCLUSIVELY AT MACY'S AND MACYS.COM





## It soothes the five senses. It drives with a sixth.

**Introducing the new 2018 S-Class.** Never before has an S-Class existed in more complete harmony with both its driver and its surroundings. With a single selection, you can adjust the 64-color ambient lighting, cabin climate, fragrance intensity and Burmester® Surround Sound System to match your mood. All while an advanced suite of driver assistance systems intelligently monitors the road ahead and micro-adjusts the drive—reenergizing the driver and an industry. [MBUSA.com/S-Class](http://MBUSA.com/S-Class)

**Mercedes-Benz**  
The best or nothing.

